

STATEWIDE  
ACC: 43

# RECONNAISSANCE DATA ON LAKES IN WASHINGTON VOLUME 1

CLALLAM, ISLAND, JEFFERSON, SAN JUAN,  
SKAGIT, AND WHATCOM COUNTIES



STATE OF WASHINGTON  
DANIEL J. EVANS, Governor  
DEPARTMENT OF ECOLOGY  
JOHN A. BIGGS, Director

Water-Supply Bulletin 43, Vol.1

Prepared in Cooperation with  
United States Department of the Interior  
Geological Survey • 1976





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STATE OF WASHINGTON  
Daniel J. Evans, Governor

DEPARTMENT OF ECOLOGY  
John A. Biggs, Director

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Water-Supply Bulletin 43, Vol. 1

RECONNAISSANCE DATA ON LAKES IN WASHINGTON

VOLUME 1

CLALLAM, ISLAND, JEFFERSON, SAN JUAN, SKAGIT,  
AND WHATCOM COUNTIES

By

G. C. Bortleson, N. P. Dion, J. B. McConnell,  
and L. M. Nelson

Prepared in cooperation with the  
State of Washington Department of Ecology

Tacoma, Washington  
1976





## CONTENTS

	Page
Abstract-----	1
Introduction-----	1
Purpose and scope-----	3
Acknowledgments-----	3
Occurrence of lakes in Washington-----	3
Data collected and definitions-----	4
Glossary-----	10
References cited-----	12
Basic data-----	13
Lakes in Clallam County-----	14
Lakes in Island County-----	41
Lakes in Jefferson County-----	64
Lakes in San Juan County-----	89
Lakes in Skagit County-----	117
Lakes in Whatcom County-----	193
Index-----	247

## ILLUSTRATION

FIGURE 1. Map of Washington, showing location of counties covered in each volume of seven-volume report series-----	2
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The following factors are provided for conversion of English values used in this report to metric values:

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<u>Multiply</u>	<u>By</u>	<u>To obtain</u>
Inches	2.54	centimetres (cm)
Feet (ft)	.3048	metres (m)
Miles (mi)	1.609	kilometres (km)
Cubic feet (ft <sup>3</sup> )	.02832	cubic metres (m <sup>3</sup> )
Square miles (sq mi)	2.590	square kilometres (km <sup>2</sup> )
Acres	4047.	square metres (m <sup>2</sup> )
	.4047	hectares (ha)
Cubic feet per second (ft <sup>3</sup> /s)	.02832	cubic metres per second (m <sup>3</sup> /s)

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RECONNAISSANCE DATA ON LAKES IN WASHINGTON  
VOLUME 1

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ABSTRACT

A total of 89 lakes in six counties of northwestern Washington was sampled using helicopter or boat to obtain information on their physical, cultural, and water-quality conditions. The basic data presented will be useful to planning groups involved in lake management and to sportsmen, tourists, and others interested in Washington's lakes.

INTRODUCTION

The State of Washington has more than 7,800 lakes, ponds, and reservoirs (Wolcott, 1964 and 1965), many of which provide excellent recreational opportunities and supply water for agricultural, municipal, and industrial purposes. These water bodies constitute an important part of the State's total water resources and are an integral part of the hydrology of many drainage basins.

This is the first of a seven-volume series of reports on Washington lakes and contains data from 89 lakes in Clallam, Island, Jefferson, San Juan, Skagit, and Whatcom Counties in the northwestern part of the State (fig. 1).

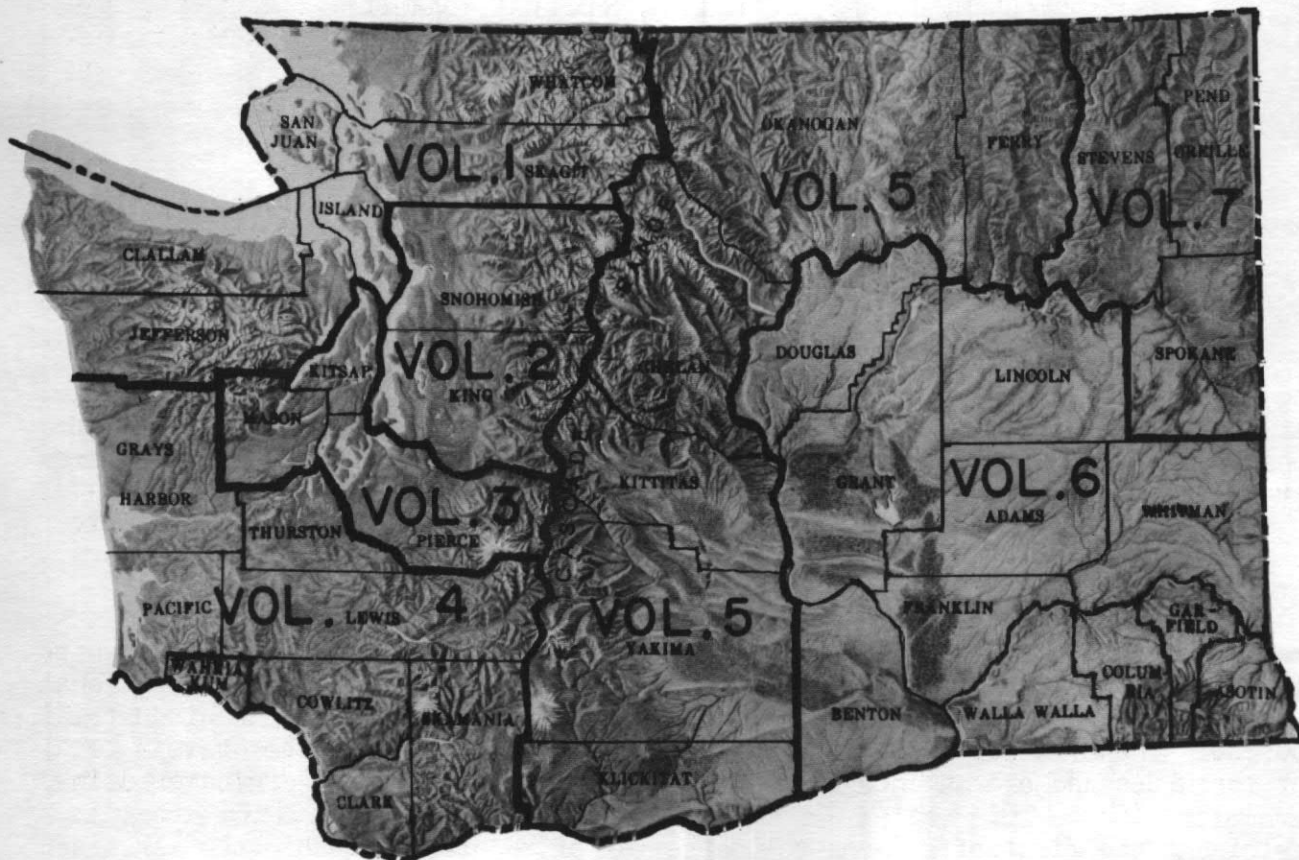


FIGURE 1.--Location of counties covered in each of seven-volume report series.



## Purpose and Scope

Although both the importance and value of the Washington lakes are widely recognized, the quantity and types of information currently available for most of the lakes are not adequate to provide the understanding needed for wise management of the lakes. Thus, the need to obtain additional information about lakes resulted in the initiation in 1970 of a cooperative program between the Washington State Department of Ecology and the U.S. Geological Survey, whereby selected lakes in Washington would be investigated (Collings, 1973; Bortleson and others, 1974). Because the program--designed for the study of approximately 25 lakes per year during fiscal years 1970-74--deals with only a small fraction of the total number of lakes in the State, a reconnaissance study involving several hundred lakes was undertaken to provide preliminary information for use by planning groups as well as sportsmen, tourists, and others interested in preserving the water quality of Washington's lakes.

In general, the study consists of a data-collection program designed to (1) document the present water quality and the overall status of the lakes, and (2) provide basic data pertaining to the physical, cultural, and water-quality characteristics of the lakes.

More than 750 lakes in all but four counties of the State were studied; these are equally distributed between western and eastern Washington. Most of the lakes investigated were 20 acres or larger in size and were selected because they constitute shorelines of the State covered under the Shoreline Management Act of 1971 (Washington State Department of Ecology, 1973). However, some of the lakes listed as constituting shorelines of the State were not sampled; these included marshes with no open water or intermittent lakes which were dry at the time of visit.

## Acknowledgments

The authors gratefully acknowledge the assistance of the State of Washington Department of Game for permission to reproduce many of the lake bathymetric maps. Many other bathymetric maps were reproduced from those in the reports by Wolcott (1964, 1965).

## Occurrence of Lakes in Washington

Lakes in Washington occur under various geologic conditions. In the Puget Sound Lowland of western Washington most lakes occupy depressions in the surface of glacial drift--the sand, gravel, silt, clay, and till laid down by the Puget lobe of continental glaciers during the ice age. These depressions are either elongate troughs cut by the passing ice sheet or are more circular kettles formed by the melting of stagnant ice blocks.

In the adjacent foothills of the Cascade Range and Olympic Mountains, most lakes occupy depressions eroded into the bedrock by the passing continental glacier, while lakes in the higher mountains are in basins cut by local alpine glaciers.

In eastern Washington, lakes in the higher northern areas--the Okanogan Highlands and Selkirk Mountains--and on the eastern slope of the Cascade Range generally occur in glacier-cut depressions in bedrock. In the semiarid Columbia Plateau, underlain by basalt, most lakes occupy the more deeply cut parts of some coulees of the channeled scablands. Most of these coulees were cut by gigantic, catastrophic floods (Bretz, 1959) resulting from the breaking of ice dams and the rapid emptying of large glacial lakes.

Many lakes have been formed, or increased in size, by man's activities. Numerous reservoirs are located in mountain valleys and serve a variety of purposes, including municipal water supply, irrigation, electrical-power generation, flood control, and recreation. In lowland areas some natural lakes have been enlarged or new lakes have been formed by small dams. In the Columbia Basin Irrigation Project area of eastern Washington, several lakes have been enlarged and reservoirs (Banks Lake and Potholes Reservoir) have been created in conjunction with large-scale irrigation by water diverted from the Columbia River at Grand Coulee Dam. Also, numerous small lakes and ponds have resulted from irrigation in the area.

#### Data Collected and Definitions

The data collected and the lake parameters used in describing the individual lakes are explained here, prior to presentation of the data for each lake. The parameters are discussed in the sequence in which they appear on the data sheets. The definitions of additional limnological and hydrological terms used throughout the report are found in the Glossary (p.10).

Lake name. The lake name was taken from U.S. Geological Survey topographic maps. Duplicate lake names are followed by location designations for uniqueness. Lakes that are not named on the topographic map and for which no local name is known are referred to as "unnamed," followed by a location designation. Only the proper name of the lake is given; in common usage the term "Lake" may either precede or follow the proper name. All adjectives (for example, Big, East, and Upper) follow the lake name. When a lake has two names, both are given, but priority is given to the topographic-map name. The lake names and respective data are listed alphabetically by counties.

Location. Latitude, longitude, township, range, and section location were determined from U.S. Geological Survey quadrangle maps. The location point is the lake outlet. For lakes without outlets, the southernmost shoreline point is used. The lakes are presented in the report according to the county in which the location point occurs.

Drainage basin. The major drainage system in which the lake is located was determined. Some lakes drain directly into Puget Sound or the Pacific Ocean without entering a major river system.



Physical data. Physical parameters were determined from topographic and bathymetric (bottom-contour) maps of the lakes. If bathymetric maps were not available, the lakes were sounded and charted by boat using a continuous-recording fathometer. For lakes with no boat access, a helicopter equipped with a fathometer, pontoons, and a conventional outboard motor was used to chart the lake. By use of aerial photographs and lake depths, the bathymetric data were digitized and transferred to computer cards which served as input to a computerized program that calculated lake morphometric parameters (for example, lake volume, surface area, and length of shoreline).

Drainage area.--The surface-drainage area, that contributes water to the lake is given in square miles (sq mi). These areas were delineated on U.S. Geological Survey topographic maps and measured by planimeter. Some lakes are in drainage basins of low relief in which surface runoff to the lake may not be a significant factor. Nevertheless, in all cases the drainage area was determined according to topographic divide.

Surface altitude.--A single altitude in feet (ft) above mean sea level (msl), obtained from topographic maps, is given for each lake. If not specifically shown on the map, altitudes are estimated from the nearest contour line. The altitude of a reservoir is given as the level of the water surface at normal full reservoir capacity.

Surface area (A).--The surface area of the lake, in acres, was obtained from planimetry of the lake outline or from computerized calculations of digitized data.

Volume (V).--Lake volume, in acre-feet, was obtained either by computing and then summing the volumes of each stratum of water between successive contours on the bathymetric map or by calculating from digitized data. Because lake volume can vary between seasons and from year to year, the volume figures reported (as well as other morphometric data) are intended only to describe the general size of the lake.

Mean depth ( $\bar{Z}$ ).--The mean depth, in feet, for a specified lake stage, was obtained by dividing the volume of the lake by its area.

Maximum depth ( $Z_m$ ).--The difference in elevation, in feet, between the bottom and the surface of the lake. The maximum depth obtained from field surveys may not necessarily be shown on the bathymetric maps.

Length of shoreline (L).--The distance around, or perimeter, in miles, of the water surface touching the shore at a specified lake stage. The shoreline length depends on the fineness of detail of the shore outline on the bathymetric map.

Shoreline configuration ( $D_L$ ).--A dimensionless ratio of the length of shoreline to the circumference of a circle having an area equal to that of the lake, given as

$$D_L = \frac{L}{2\sqrt{\pi A}}$$

This quantity may be regarded as an index of the geological and littoral processes affecting the shape of the lake. Nearly circular lakes have values near unity, subcircular lakes have slightly greater  $D_L$  values and elongate lakes have the highest  $D_L$  values. High  $D_L$  values are common to lakes formed along old drainages or by the damming of streams to form a lake in the valley behind a dam.

High values for shoreline configuration suggest the presence of shallow water and protected bays--areas suitable for plant growth--and also indicate an increase in contact between land and water. Therefore, shoreline configuration is often an indirect indicator of plant growth capacity and enrichment potential from nearshore development and runoff.

Development of volume ( $D_V$ ).--The development of volume is defined as the ratio of the mean depth ( $\bar{Z}$ ) to the maximum depth ( $Z_m$ ). Thus, lakes with a low  $D_V$  ratio are usually conical-shaped depressions, and lakes with a high  $D_V$  ratio are steep-sided with flat bottoms. Shallow lakes which have large values for development of volume ( $D_V$ ), tend to provide the greater opportunity for exposure of bottom sediments to overlying water and for circulation of bottom nutrients.

Bottom slope ( $Z_r$ ).--The slope profile of a lake bottom, expressed as a percentage ratio of the maximum depth to the mean lake diameter (referred to by Hutchinson, 1957, p. 167, as relative depth) and given as

$$Z_r = \frac{Z_m \times 50\sqrt{\pi}}{\sqrt{A}}$$

Bottom slope is a measure of the extent of shallow water and is important to the growth of rooted aquatic plants and potential for wind mixing of water with bottom sediments.

Basin geology. The predominant geology of the lake's drainage basin was obtained from a geologic map of the State of Washington (Hunting and others, 1961). The drainage basin is indicated as being underlain by either (1) unconsolidated sedimentary deposits and (or) metasedimentary rocks, or (2) igneous rocks.

Inflow. Perennial or intermittent surface inflow is indicated, if known. Some lakes have no visible inflow, and water gain is from direct precipitation on the lake and (or) from ground-water seepage.

Outflow. The presence or absence of a surface-water outflow channel is indicated. Some lakes have no surface-water outflow, and water loss is through evaporation, transpiration, and (or) ground-water seepage.

Cultural data. Data related to cultural development were obtained from topographic maps, aerial photographs, and shoreline reconnaissance by helicopter or boat.

Nearshore residential development.--The percentage of shoreline occupied by residential development was determined from aerial photographs.

Number of nearshore homes.--A count of the number of nearshore homes adjoining the lakefront was made from field observations, topographic maps, or aerial photographs.

Land use.--The drainage basins of the lakes were partitioned into various generalized land-use categories. Values given reflect the percentages of the basin used primarily for forest or for residential urban, residential suburban, or agricultural development. The lake surface is also given as a percentage of the total drainage basin. A general description of the land-use categories is as follows:

- a. Residential urban.--Predominant use is for single-family residences, where apartment complexes and commercial or industrial activities also may be present.
- b. Residential suburban.--Predominant use is single-family residences.
- c. Agricultural.--Pasture or cropland.
- d. Forest or unproductive.--Public and private forest lands and tree farms. Lands may include cleared or fallow unproductive land, meadows, wetlands, and seasonal recreational areas.
- e. Lake surface.--Includes surface area of the lake and of upstream tributary lakes.

Public boat access to lake.--The presence of a public boat access is indicated. Most public boat access facilities are maintained by the State of Washington Department of Game. The location of the boat access (symbol ▲) is shown on the bathymetric map.

Water-quality data. From helicopters fitted with pontoons or from boats, vertical profiles of temperature and DO (dissolved oxygen) concentration were measured in the deepest part of each lake. Multiple sites were sampled on lakes with areas greater than 1,000 acres and on irregular-shaped lakes. Secchi-disc visibility was also determined. Water samples were collected for color, nutrient, and specific-conductance analyses at depths 3.0 feet below the water surface and 3-5 feet above the lake bottom. Lakes less than 5 feet deep were sampled at about one-third and two-thirds the depth of the lake. For most lakes, estimates of the percentage of both lake area and lake shoreline covered by emersed and (or) floating rooted aquatic plants were made by a visual inspection of the lake during aerial reconnaissance. Samples for fecal-coliform bacteria were collected at selected nearshore sites, approximately 100 feet offshore at a depth of 1 foot below the water surface.

Information from most of the lakes was collected during the periods of July-September 1973 or May-September 1974. Prior to 1973, some of the lakes were sampled four times during a year by Bortleson, Higgins, and Hill (1974). For those lakes sampled more than once during a year, the data from the midsummer sample period are presented. All samples were collected and analyzed according to accepted standardized procedures (American Public Health Association and others, 1971; Brown and others, 1970; and Slack and others, 1973).

**Nutrients.**--A nutrient is any chemical element, ion, or compound that is required by an organism for the continuation of growth, reproduction, and other life processes. Many elements and compounds act as nutrients to supply the food for aquatic plants and algae. However, nitrogen and phosphorus usually are considered the limiting nutrients to plant growth and as such received the most emphasis in this study. Whatever nutrient is limiting aquatic plant growth, the concentrations of nitrogen and phosphorus are useful in evaluating the trophic conditions of a lake (Lee, 1970). The nutrient concentrations that were determined at top and bottom sampling depths included total nitrate, nitrite, ammonia and organic nitrogen, phosphorus, and orthophosphate. For those lakes sampled during previous studies (Bortleson and others, 1974), the samples for orthophosphate, nitrite, and nitrate were filtered through a 0.45- $\mu$ m (micrometre) millipore filter. The concentrations of these particular samples are indicated as "dissolved."

**Specific conductance.**--Specific conductance is a measure of the water's ability to conduct an electric current and is expressed in micromhos per centimetre at 25°C (Celsius). Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids concentration in the water.

**Water temperature.**--Temperature, which varies in lakes with depth and time of year, is an important controlling factor for life processes and chemical-reaction rates, as well as many physical events that occur in the aquatic environment.

For most lakes, the water temperatures listed for the upper, near-surface water were probably close to the maximum for the year when sampled. Temperature profiles in lakes during midsummer, when thermal stratification is marked, generally follow one of two common patterns. In shallow lakes, well exposed to the wind, temperatures will be found to be practically constant from top to bottom. This uniformity of temperature indicates that the waters are well mixed throughout. The other common pattern occurs in deeper lakes, where three characteristic thermal layers are present: (1) an upper zone (epilimnion) of generally warmer water in which temperature is more or less uniform throughout; (2) an intermediate zone (metalimnion) in which temperature decreases rapidly with depth; and (3) a lower zone (hypolimnion) of colder water in which temperature is again more or less uniform throughout.

The temperature of the deep-water layer (hypolimnion) during midsummer is of biological significance because (1) temperature stratification and water circulation affect the vertical distribution of nutrients, and (2) water temperatures affect the potential of cold-water fisheries resources.

**Color.**--Color is one control of light transmission through water. High color values often result from the decomposition of vegetation, giving the water a brown, tea-like color and reducing water clarity. Color value is determined by a comparison of the water with standardized colored-glass discs and is reported in platinum-cobalt (Pt-Co) units.

**Secchi-disc visibility.**--Secchi-disc visibility is the depth at which a black and white disc (8 inches in diameter) disappears from view when lowered into the water. Secchi-disc visibility is a measure of water transparency or clarity. Because changes in biological production can cause changes in the color and turbidity of a lake, Secchi-disc visibility often is used as a gross measure of the quantity of plankton in the water. Secchi-disc depths preceded by the symbol ">" indicate the disc was resting on the bottom of the lake and was still visible.

**Dissolved oxygen.**--The concentration of DO in a lake varies with time of year and depth of water and is a function of many factors, including the water temperature, atmospheric pressure, and salinity of the water. Oxygen concentration in water is continually being altered by life processes, such as photosynthesis and respiration, and by complex chemical reactions. Of special biological significance is the amount of DO in the hypolimnion during midsummer. The organisms in the lighted upper layers of water produce organic matter which eventually settles to the bottom where bacteria consume oxygen to degrade the organic materials, thereby reducing the DO concentration in the hypolimnion. The hypolimnetic-oxygen deficit frequently is related to the biomass or plant growth in the upper waters (Hutchinson, 1957). For good growth and general health of trout, salmon, and other species of cold-water biota, the DO concentrations should not be less than 6.0 mg/l (milligrams per litre) according to the Federal Water Pollution Control Administration (1968).

**Emersed plants.**--These are large plants that can be seen without magnification. Examples of emersed plants include cattails and sedges in which the leaves or other structures extend above the water surface. In this report, rooted floating aquatic plants such as waterlilies and watershield are considered emersed. The rooted aquatic-plant growth was assessed according to the percentage of the lakeshore and water surface covered by emersed and (or) floating plants.

**Remarks.** This includes other useful lake information that was obtained during the reconnaissance. Such topics as the following might be included.

1. Descriptive information.
2. Qualifying statements.
3. Availability of additional information.
4. Unusual lake or drainage-basin characteristics.

Bathymetric maps. With the exception of two lakes and a large reservoir, a bathymetric map is given for each lake. The map source and date of the survey are indicated.

Aerial photographs. An aerial photograph is shown for each lake and reservoir. Black-and-white aerial photographs at an approximate scale of 1:12,000 and 1:63,000 were obtained from the State of Washington Department of Natural Resources. Additional aerial photographs at an approximate scale of 1:4,800 were taken by the U.S. Geological Survey of selected lakes in the populated, 10-county Puget Sound area and of other selected lakes throughout the State. Many of the bathymetric maps produced by the U.S. Geological Survey are shown superimposed on the aerial photographs.

#### GLOSSARY

Acre-foot. Volume of water required to cover 1 acre to a depth of 1 foot, and equal to 43,560 ft<sup>3</sup> (325,851 gallons).

Algae. Simple plants, many microscopic; contain chlorophyll and lack roots, stems, and leaves. Most algae are aquatic and may become a nuisance when environmental conditions are suitable for prolific growth.

Algal bloom. A large number of a particular algal species. A condition when water looks green because of the abundance of planktonic algae.

Bathymetric. Relating to the measurement of water depths, as for a lake.

Cultural eutrophication. The acceleration of the natural process of nutrient enrichment in a lake as a result of man's activities.

Emersed plant. These are large plants that can be seen without magnification. Examples of emersed plants include cattails and sedges in which the leaves or other structures extend above the water surface. In this report, rooted floating aquatic plants such as waterlilies and watershield are considered emersed.

Eutrophication, eutrophic. The enrichment of water, a natural process that may be accelerated by the activities of man; pertains to waters in which primary productivity is generally high as a consequence of a large supply of available nutrients.

Hydrogen sulfide. A gas with a distinctive "rotten egg" odor which can be detected in the hypolimnetic water containing only a few tenths of a milligram per litre of sulfide.

Intermittent or seasonal stream. Flows at certain times of the year when it receives water from springs or from some surface source, such as melting snow in mountainous areas.

Littoral. The shoreward region of a body of water.



Macrophyte. Large plants that can be seen without magnification; includes mosses and seed plants.

Marsh. Periodically wet or continually flooded areas where the surface is not deeply submerged, covered dominantly with sedges, cattails, rushes, or other plants that require marshy conditions for their growth.

Morphometry. Definition of physical shape and size, as of a water body.

Muck. A mixture containing highly decomposed organic material in which the original plant parts are not recognizable. Contains more mineral matter, and is usually darker, than peat.

Plankton. Suspended organisms that drift with the water currents.

Production. The total amount of living matter produced in an area per unit time regardless of the fate of the living matter.

Submersed plant. A rooted aquatic plant that lives and completes its life cycle entirely below the surface of the water. Examples of submersed plants include water milfoil, pondweed, and elodea.

Thermal stratification. The layering of water masses owing to different densities in response to temperature.

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B A S I C   D A T A



CLALLAM  
COUNTY





## ALDWELL LAKE

## CLALLAM COUNTY

LATITUDE 48° 5'41" LONGITUDE 123°33'21" T30N-R7W-15  
ELWA RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 315. SQ MI  
ALTITUDE 188. FT  
LAKE AREA 270. ACRES  
LAKE VOLUME 7600. ACRE-FT  
MEAN DEPTH 28. FT  
MAXIMUM DEPTH 94. FT  
SHORELINE LENGTH 5.9 MI  
SHORELINE CONFIGURATION 2.6  
DEVELOPMENT OF VOLUME 0.30  
BOTTOM SLOPE 2.4 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN <1 %  
AGRICULTURAL 1 %  
FOREST OR UNPRODUCTIVE 98 %  
LAKE SURFACE 1 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 8/12/74  
TIME 1205 1210  
DEPTH (FT) 3. 66.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.03  
TOTAL ORGANIC NITROGEN (N) 0.02 0.08  
TOTAL PHOSPHORUS (P) 0.004 0.005  
TOTAL ORTHOPHOSPHATE (P) 0.001 0.003  
SPECIFIC CONDUCTANCE (MICROMHOS) 73 73  
WATER TEMPERATURE (DEG C) 11.8 10.1  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 8  
DISSOLVED OXYGEN 11.0 10.6

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

DATE

8/12/74

TIME

1225

NUMBER OF FECAL COLIFORM SAMPLES

4

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

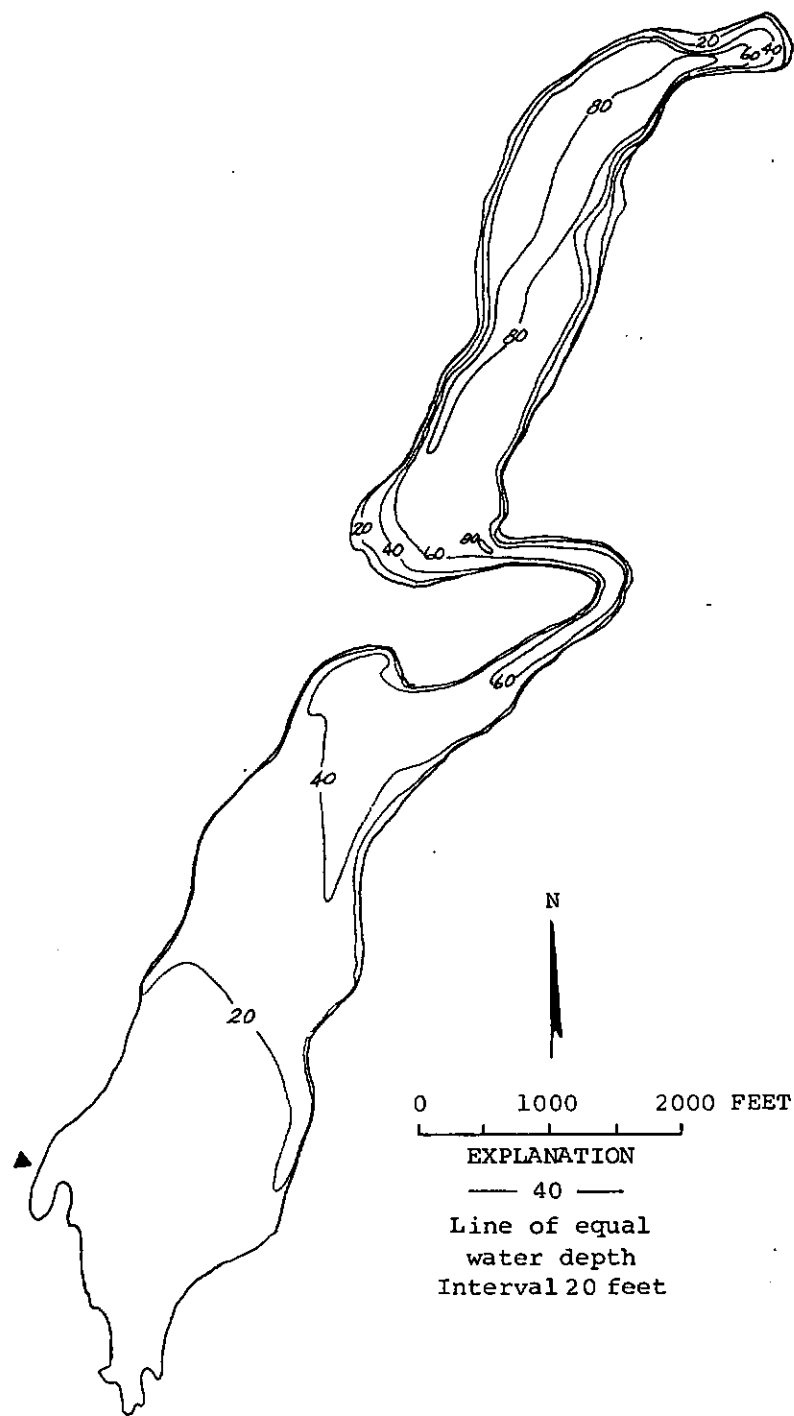
&lt;1

FECAL COLIFORM, MEAN (COL./100ML)

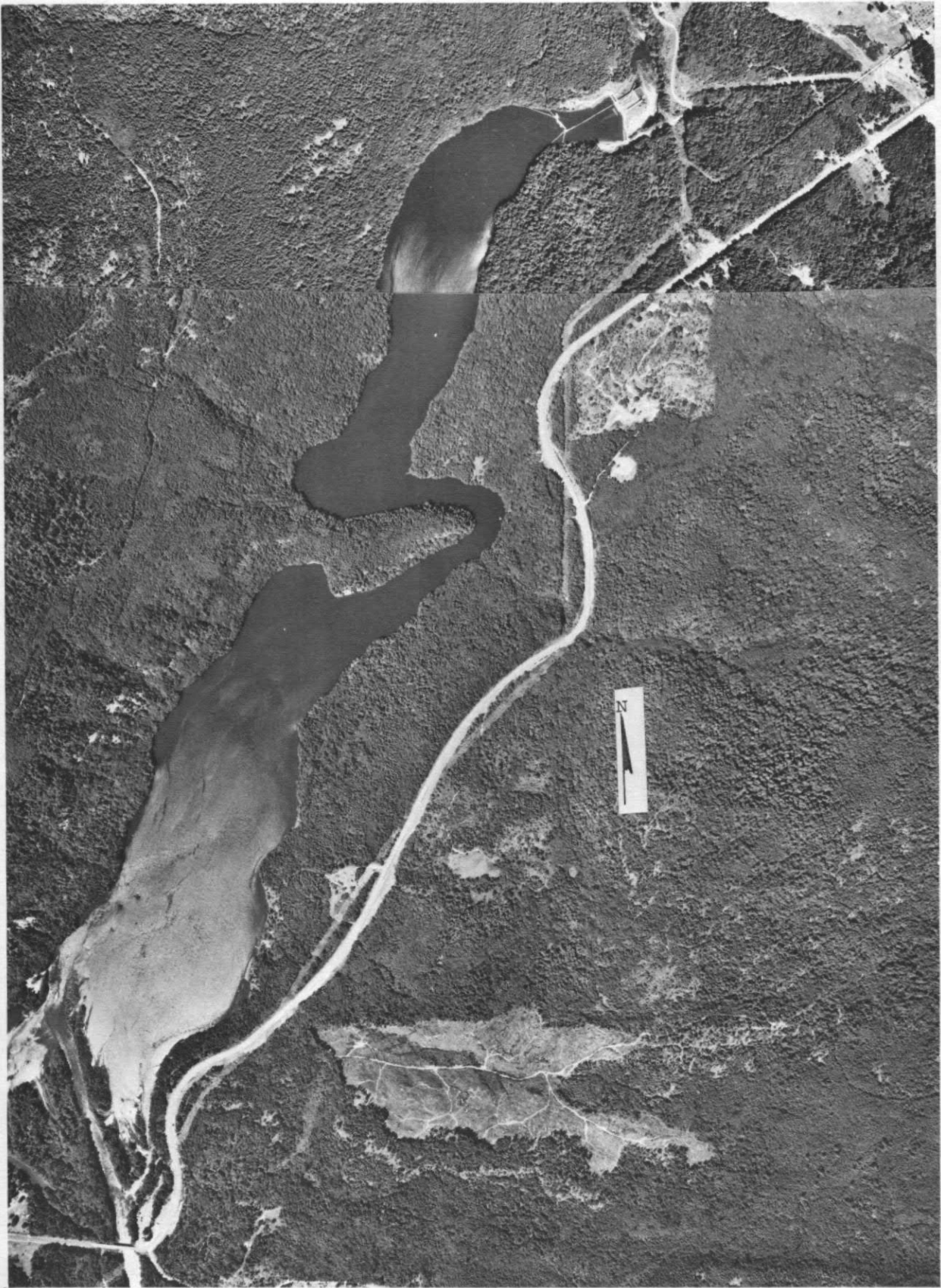
&lt;1

## REMARKS

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THE RESERVOIR IS USED FOR POWER AND RECREATION. THERE WAS LITTLE EVIDENCE OF EITHER SUBMERSED OR SURFACE AQUATIC MACROPHYTE GROWTH. THE DO WAS NEAR SATURATION THROUGHOUT THE WATER COLUMN.



Aldwell Lake, Clallam County. From U.S. Geological Survey, March 27, 1974.



Aldwell Lake, Clallam County. July 17, 1971. Approx. scale 1:14,000.

## BEAVER LAKE

## CLALLAM COUNTY

LATITUDE 48° 6'36" LONGITUDE 124°14'49" T30N-R12W-9  
 QUILLAYUTE RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 6.11 SQ MI  
 ALTITUDE 550. FT  
 LAKE AREA 44. ACRES  
 LAKE VOLUME 840. ACRE-FT  
 MEAN DEPTH 19. FT  
 MAXIMUM DEPTH 35. FT  
 SHORELINE LENGTH 1.2 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.55  
 BOTTOM SLOPE 2.2 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 99 %  
 LAKE SURFACE 1 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

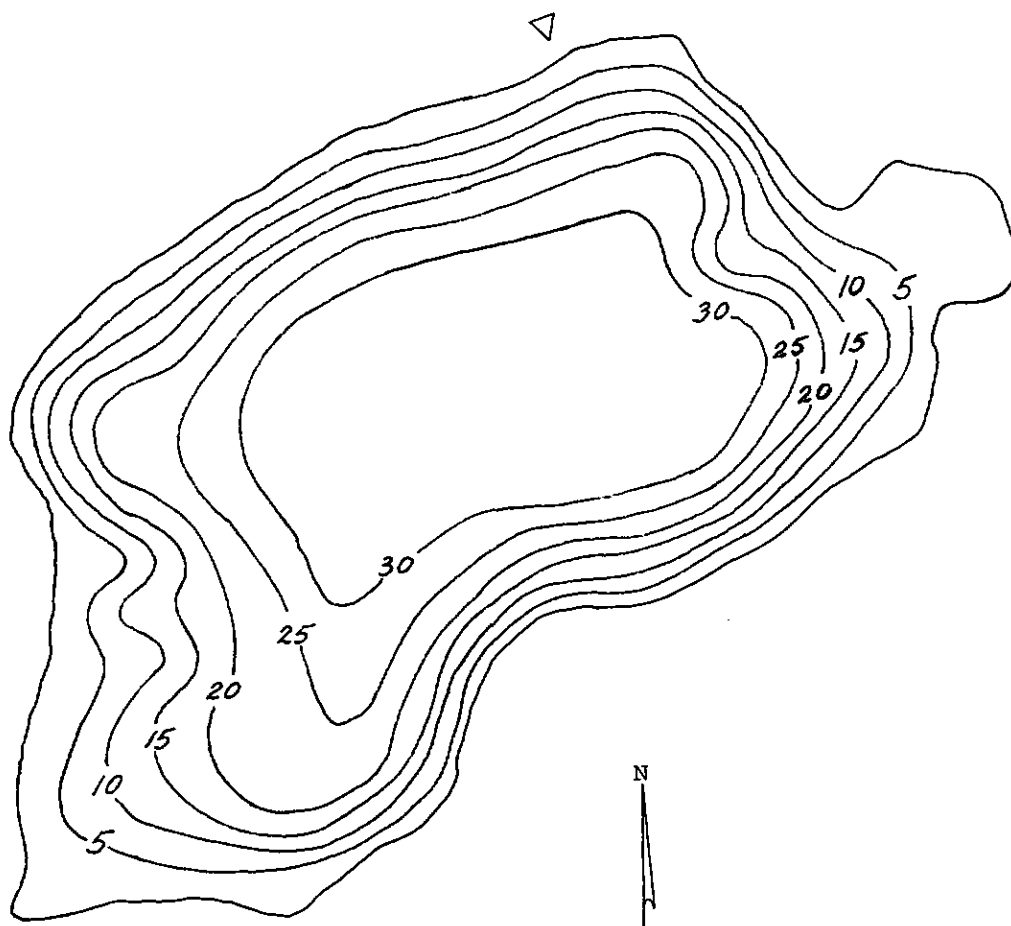
-----  
 SAMPLE SITE 1  
 DATE 8/12/74  
 TIME 1340 1345  
 DEPTH (FT) 3. 30.  
 TOTAL NITRATE (N) 0.00 0.03  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.04 0.37  
 TOTAL ORGANIC NITROGEN (N) 0.29 0.15  
 TOTAL PHOSPHORUS (P) 0.012 0.024  
 TOTAL ORTHOPHOSPHATE (P) 0.004 0.021  
 SPECIFIC CONDUCTANCE (MICROMHOS) 76 80  
 WATER TEMPERATURE (DEG C) 17.3 9.0  
 COLOR (PLATINUM-COBALT UNITS) 20 45  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 9.3 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/12/74  
 TIME 1355  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 2  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 THE LAKE IS FED BY A CREEK WHICH DRAINS A LARGE MARSH. SUBMERSED AND EMERSED PLANTS COVERED MOST OF THE SHORELINE. AN ALGAL BLOOM WAS OBSERVED. MUCK COVERS MOST OF THE LITTORAL BOTTOM.



0 500 1000 FEET

EXPLANATION  
— 10 —  
Line of equal  
water depth  
Interval 5 feet

Beaver Lake, Clallam County. From U.S. Geological Survey, August 21, 1974.



Beaver Lake, Clallam County. July 16, 1971. Approx. scale 1:12,000.



DICKEY LAKE

CLALLAM COUNTY

LATITUDE 48° 5'59" LONGITUDE 124°30'22" T30N-R14W-16  
QUILLAYUTE RIVER BASIN

PHYSICAL DATA

-----  
DRAINAGE AREA 14.7 SQ MI  
ALTITUDE 193. FT  
LAKE AREA 500. ACRES  
LAKE VOLUME 13000. ACRE-FT  
MEAN DEPTH 25. FT  
MAXIMUM DEPTH 45. FT  
SHORELINE LENGTH 5.0 MI  
SHORELINE CONFIGURATION 1.6  
DEVELOPMENT OF VOLUME 0.56  
BOTTOM SLOPE 0.86 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 95 %  
LAKE SURFACE 5 %  
PUBLIC BOAT ACCESS TO LAKE --

WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE

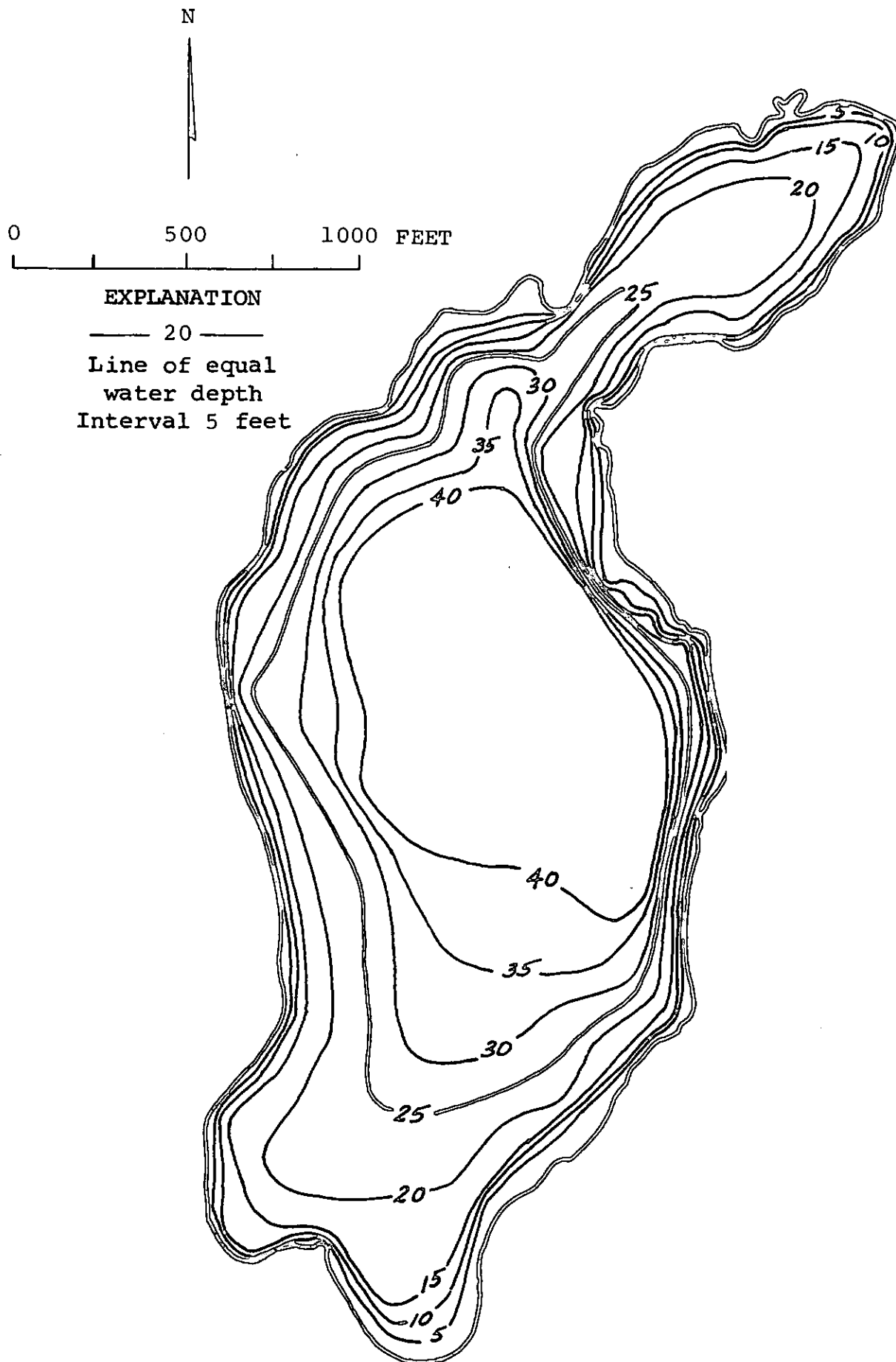
DATE 8/12/74  
TIME 1605 1610  
DEPTH (FT) 3. 33.  
TOTAL NITRATE (N) 0.00 0.06  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.05 0.10  
TOTAL ORGANIC NITROGEN (N) 0.32 0.19  
TOTAL PHOSPHORUS (P) 0.015 0.021  
TOTAL ORTHOPHOSPHATE (P) 0.006 0.014  
SPECIFIC CONDUCTANCE (MICROMHOS) 32 33  
WATER TEMPERATURE (DEG C) 20.2 10.8  
COLOR (PLATINUM-COBALT UNITS) 45 65  
SECCHI-DISC VISIBILITY (FT) 9  
DISSOLVED OXYGEN 8.7 3.0

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/12/74  
TIME 1615  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 2  
FECAL COLIFORM, MEAN (COL./100ML) 1

REMARKS

-----  
EMERSED PLANTS COVERED MOST OF LAKE SHORELINE. THE LITTORAL BOTTOM IS  
MOSTLY MUCK.



Dickey Lake, Clallam County. From U.S. Geological Survey, August 26, 1974.



Dickey Lake, Clallam County. July 16, 1971. Approx. scale 1:12,000.

## ELK LAKE

## CLALLAM COUNTY

LATITUDE 48°12'10" LONGITUDE 124°34'36" T31N-R15W-12  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.08 SQ MI  
 ALTITUDE 380. FT  
 LAKE AREA 100. ACRES  
 LAKE VOLUME 1400. ACRE-FT  
 MEAN DEPTH 14. FT  
 MAXIMUM DEPTH 33. FT  
 SHORELINE LENGTH 2.3 MI  
 SHORELINE CONFIGURATION 1.7  
 DEVELOPMENT OF VOLUME 0.42  
 BOTTOM SLOPE 1.4 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NOT DETERMINED  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 86 %  
 LAKE SURFACE 14 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

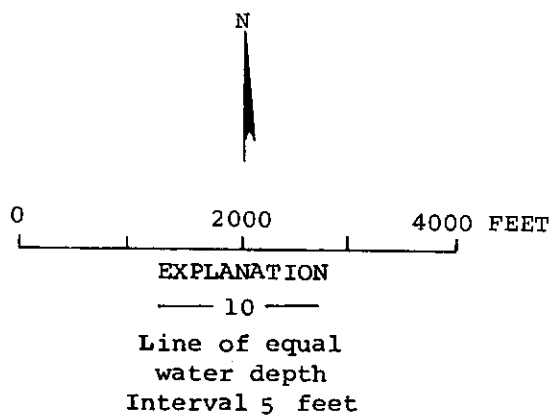
-----  
 SAMPLE SITE 1  
 DATE 8/12/74  
 TIME 1700 1705  
 DEPTH (FT) 3. 26.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.07 0.27  
 TOTAL ORGANIC NITROGEN (N) 0.31 0.29  
 TOTAL PHOSPHORUS (P) 0.012 0.043  
 TOTAL ORTHOPHOSPHATE (P) 0.008 0.030  
 SPECIFIC CONDUCTANCE (MICROMHOS) 27 35  
 WATER TEMPERATURE (DEG C) 19.3 8.7  
 COLOR (PLATINUM-COBALT UNITS) 25 65  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 7.6 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/12/74  
 TIME 1720  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 2  
 FECAL COLIFORM, MEAN (COL./100ML) 1

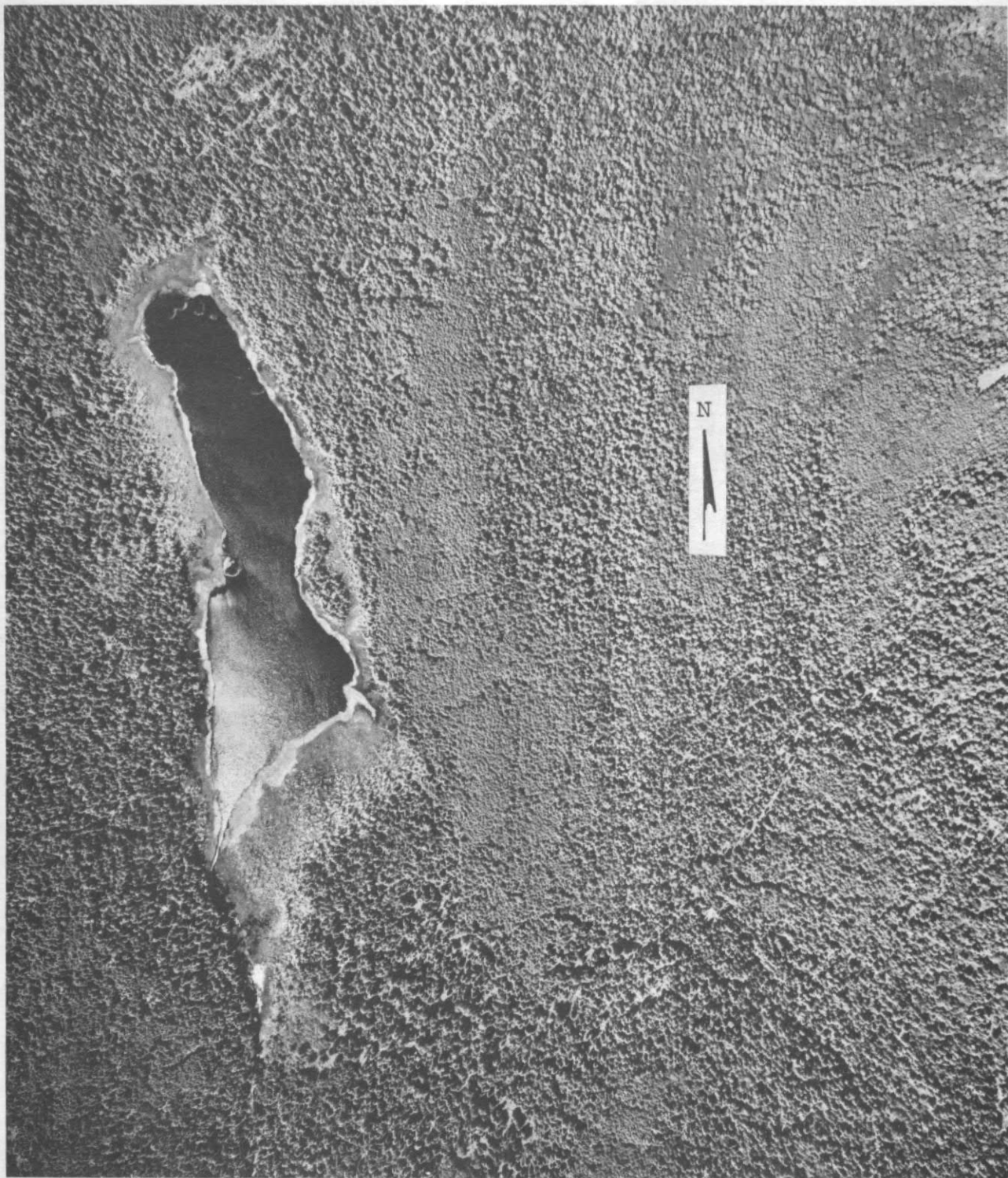
## REMARKS

-----  
 EMERSED PLANTS COVERED LAKE SHORELINE. THE LITTORAL BOTTOM IS MOSTLY MUCK. THE SURROUNDING HILLS ARE LOGGED.



Elk Lake, Clallam County. From U.S. Geological Survey, May 24, 1974.





Elk Lake, Clallam County. July 16, 1971. Approx. scale 1:12,000.



## OZETTE LAKE

## CLALLAM COUNTY

LATITUDE 48° 9' 12" LONGITUDE 124° 40' 5" T31N-R15W-31  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 77.5 SQ MI  
 ALTITUDE 29. FT  
 LAKE AREA 7300. ACRES  
 LAKE VOLUME 960000. ACRE-FT  
 MEAN DEPTH 130. FT  
 MAXIMUM DEPTH 320. FT  
 SHORELINE LENGTH 31. MI  
 SHORELINE CONFIGURATION 2.6  
 DEVELOPMENT OF VOLUME 0.42  
 BOTTOM SLOPE 1.6 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 3 %  
 NUMBER OF NEARSHORE HOMES 20  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 1 %  
 FOREST OR UNPRODUCTIVE 83 %  
 LAKE SURFACE 16 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

	1		2	
DATE	8/13/74		8/13/74	
TIME	1220	1225	1210	1215
DEPTH (FT)	3.	89.	3.	164.
TOTAL NITRATE (N)	0.01	0.01	0.01	0.10
TOTAL NITRITE (N)	0.00	0.00	0.00	0.00
TOTAL AMMONIA (N)	0.08	0.06	0.06	0.04
TOTAL ORGANIC NITROGEN (N)	0.26	0.23	0.10	0.03
TOTAL PHOSPHORUS (P)	0.005	0.005	0.007	0.008
TOTAL ORTHOPHOSPHATE (P)	0.003	0.003	0.002	0.004
SPECIFIC CONDUCTANCE (MICROMHOS)	39	41	40	40
WATER TEMPERATURE (DEG C)	19.6	7.4	19.6	7.3
COLOR (PLATINUM-COBALT UNITS)	15	20	35	40
SECCHI-DISC VISIBILITY (FT)	10		13	
DISSOLVED OXYGEN	9.0	7.4	8.9	10.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

## DATE

8/13/74

## TIME

1235

## NUMBER OF FECAL COLIFORM SAMPLES

8

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

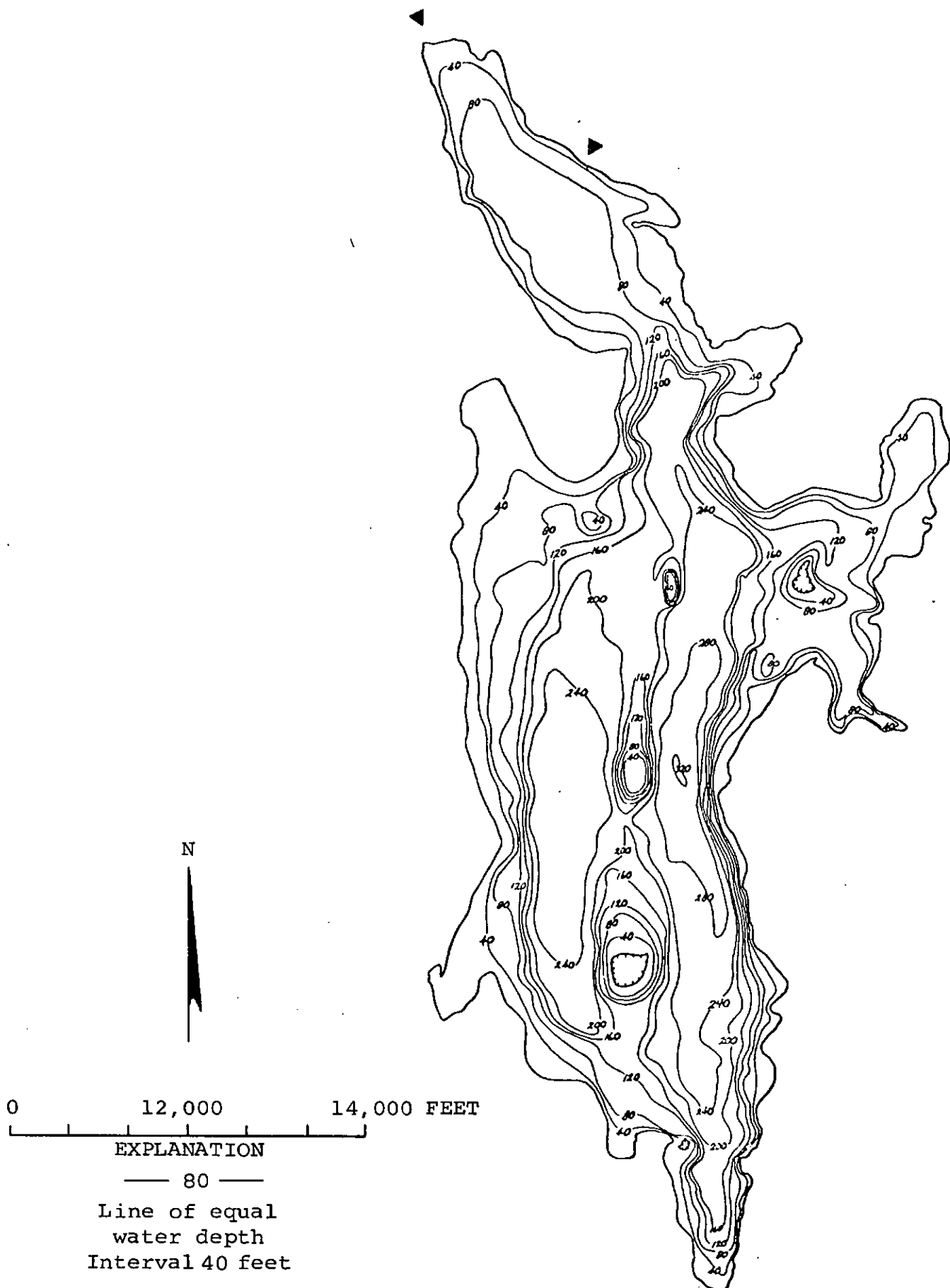
2

FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
 OZETTE LAKE IS THE THIRD LARGEST NATURAL LAKE IN THE STATE. THE DO WAS  
 NEAR SATURATION THROUGHOUT THE WATER COLUMN.



Ozette Lake, Clallam County. From U.S. Geological Survey, August 26, 1974.



Ozette Lake, Clallam County. September 4, 1973. Approx. scale 1:60,000.

## PLEASANT LAKE

## CLALLAM COUNTY

LATITUDE 48° 3'40" LONGITUDE 124°20'35" T30N-R13W-35  
QUILLAYUTE RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 8.96 SQ MI  
ALTITUDE 320. FT  
LAKE AREA 500. ACRES  
LAKE VOLUME 16000. ACRE-FT  
MEAN DEPTH 32. FT  
MAXIMUM DEPTH 50. FT  
SHORELINE LENGTH 4.9 MI  
SHORELINE CONFIGURATION 1.6  
DEVELOPMENT OF VOLUME 0.64  
BOTTOM SLOPE 0.95 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 10 %  
NUMBER OF NEARSHORE HOMES 20  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN <1 %  
RESIDENTIAL SUBURBAN 1 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 90 %  
LAKE SURFACE 9 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

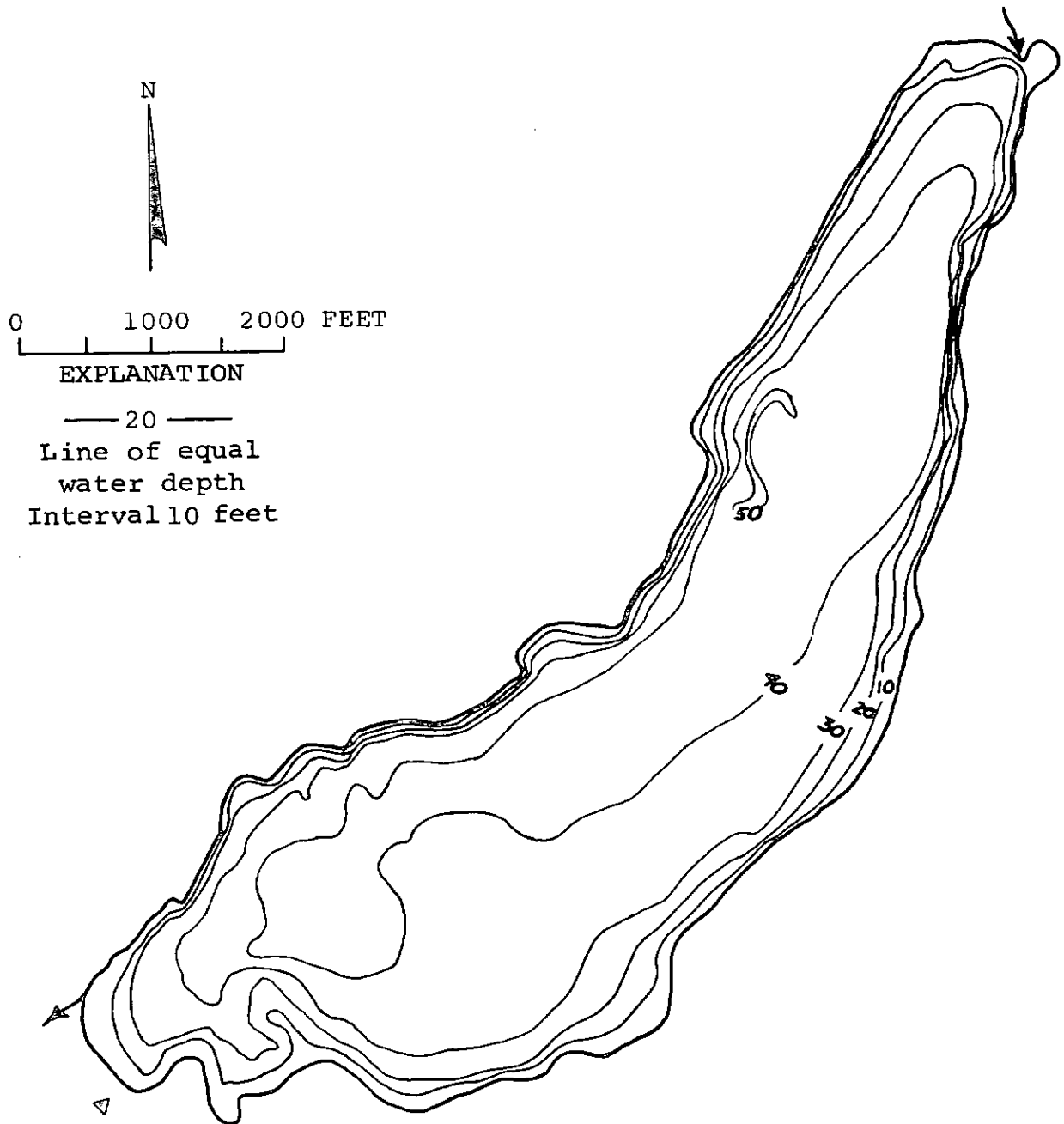
-----  
SAMPLE SITE 1  
DATE 8/12/74  
TIME 1425 1430  
DEPTH (FT) 3. 43.  
TOTAL NITRATE (N) 0.00 0.03  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.16  
TOTAL ORGANIC NITROGEN (N) 0.16 0.06  
TOTAL PHOSPHORUS (P) 0.009 0.031  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.031  
SPECIFIC CONDUCTANCE (MICROMHOS) 40 50  
WATER TEMPERATURE (DEG C) 20.7 10.9  
COLOR (PLATINUM-COBALT UNITS) 0 30  
SECCHI-DISC VISIBILITY (FT) 13  
DISSOLVED OXYGEN 9.2 1.0

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/12/74  
TIME 1430  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THE LAKE HAS MANY SNAGS AND LOGS. THE EAST SIDE OF THE LAKE RECEIVES COOLING WATER FROM A PLANT THAT MANUFACTURES CEDAR SHINGLES. THE AVERAGE FLOW IS .9MGD AND THE AVERAGE CONCENTRATION OF AMMONIA AND NITRATE IS 1.7 MG/L. NO PHOSPHORUS DATA ARE AVAILABLE (DEPT. OF ECOLOGY WASTEWATER DISCHARGE MASTER INVENTORY).



Pleasant Lake, Clallam County. From Washington Department of Game, August 7, 1952.



Pleasant Lake, Clallam County. July 16, 1971. Approx. scale 1:14,000.



## SEAFIELD LAKE

## CLALLAM COUNTY

LATITUDE 48°11'18" LONGITUDE 124°41' 7" T31N-R15W-18  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.39 SQ MI  
 ALTITUDE 80. FT  
 LAKE AREA 31. ACRES  
 LAKE VOLUME 290. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 18. FT  
 SHORELINE LENGTH 1.0 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.51  
 BOTTOM SLOPE 1.4 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 88 %  
 LAKE SURFACE 12 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

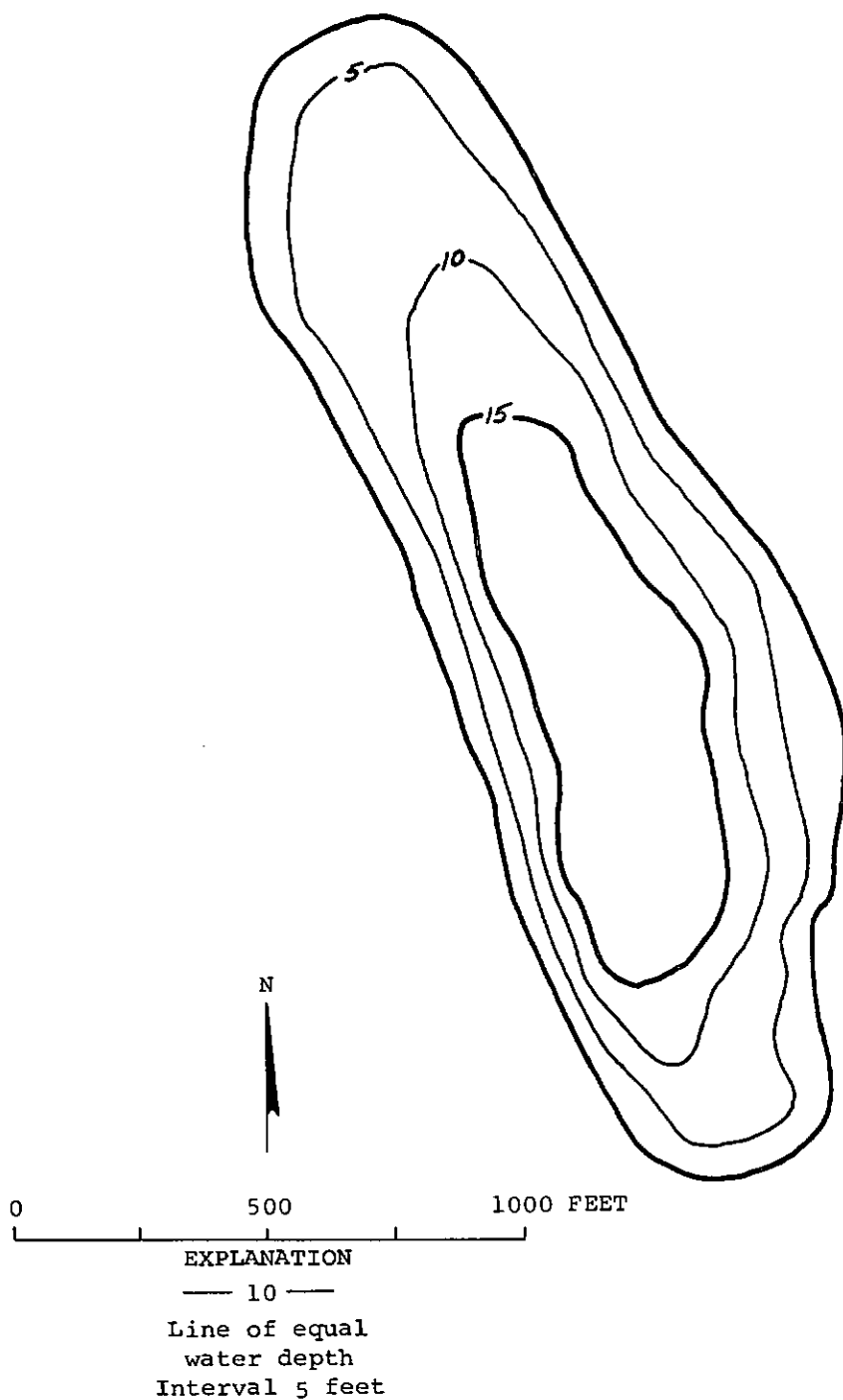
-----  
 DATE 8/13/74  
 TIME 1120 1125  
 DEPTH (FT) 3. 11.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.01 0.02  
 TOTAL AMMONIA (N) 0.25 0.31  
 TOTAL ORGANIC NITROGEN (N) 0.47 0.42  
 TOTAL PHOSPHORUS (P) 0.021 0.043  
 TOTAL ORTHOPHOSPHATE (P) 0.019 0.038  
 SPECIFIC CONDUCTANCE (MICROMHOS) 39 41  
 WATER TEMPERATURE (DEG C) 19.2 11.3  
 COLOR (PLATINUM-COBALT UNITS) 240 280  
 SECCHI-DISC VISIBILITY (FT) 2  
 DISSOLVED OXYGEN 6.9 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/13/74  
 TIME 1135  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 EMERSED PLANTS COVERED LAKE SHORELINE. THE LAKE HAS MANY LOGS AND SNAGS  
 AND THE WATER IS HIGHLY COLORED. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Seafield Lake, Clallam County. From U.S. Geological Survey, May 22, 1974.





Seafield Lake, Clallam County. July 17, 1971. Approx. scale 1:12,000.

## SUTHERLAND LAKE

## CLALLAM COUNTY

LATITUDE 48° 4' 31" LONGITUDE 123° 41' 9" T30N-R8W-22  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 7.98 SQ MI  
 ALTITUDE 525. FT  
 LAKE AREA 370. ACRES  
 LAKE VOLUME 21000. ACRE-FT  
 MEAN DEPTH 57. FT  
 MAXIMUM DEPTH 86. FT  
 SHORELINE LENGTH 4.9 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.66  
 BOTTOM SLOPE 1.9 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 65 %  
 NUMBER OF NEARSHORE HOMES 152  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 2 %  
 AGRICULTURAL <1 %  
 FOREST OR UNPRODUCTIVE 91 %  
 LAKE SURFACE 7 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/12/74  
 TIME 1225 1230  
 DEPTH (FT) 3. 66.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.02 0.02  
 TOTAL ORGANIC NITROGEN (N) 0.02 0.11  
 TOTAL PHOSPHORUS (P) 0.006 0.010  
 TOTAL ORTHOPHOSPHATE (P) 0.006 0.005  
 SPECIFIC CONDUCTANCE (MICROMHOS) 140 130  
 WATER TEMPERATURE (DEG C) 20.1 7.4  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 33  
 DISSOLVED OXYGEN 8.8 6.6

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

## DATE

8/12/74

## TIME

1225

NUMBER OF FECAL COLIFORM SAMPLES

3

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

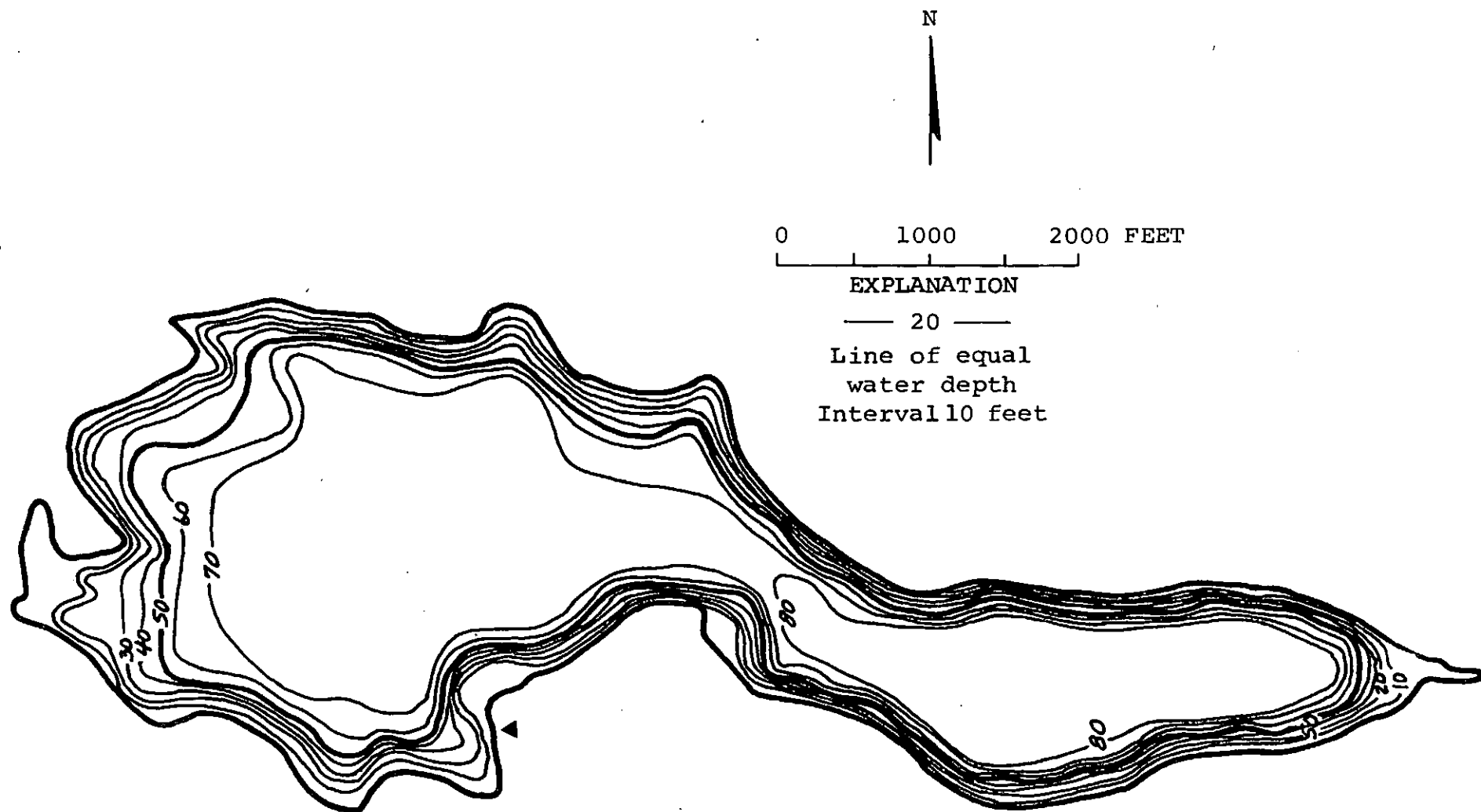
&lt;1

FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
 SUTHERLAND LAKE IS THOUGHT TO HAVE ONCE BEEN A PART OF CRESENT LAKE UNTIL  
 A SLIDE SEPARATED THE TWO. THERE WAS LITTLE EVIDENCE OF SUBMERSED OR  
 EMERSED AQUATIC PLANT GROWTH.



Sutherland Lake, Clallam County. From U.S. Geological Survey, March 26, 1974.



Sutherland Lake, Clallam County. July 17, 1971. Approx. scale 1:12,000.

## WENTWORTH LAKE

## CLALLAM COUNTY

LATITUDE 48° 0'43" LONGITUDE 124°32' 0" T29N-R14W-20  
QUILLAYUTE RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.59 SQ MI  
ALTITUDE 80. FT  
LAKE AREA 42. ACRES  
LAKE VOLUME 510. ACRE-FT  
MEAN DEPTH 12. FT  
MAXIMUM DEPTH 21. FT  
SHORELINE LENGTH 1.1 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.58  
BOTTOM SLOPE 1.4 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 89 %  
LAKE SURFACE 11 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 8/12/74  
TIME 1605 1610  
DEPTH (FT) 3. 16.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.04 0.06  
TOTAL ORGANIC NITROGEN (N) 0.31 0.23  
TOTAL PHOSPHORUS (P) 0.007 0.014  
TOTAL ORTHOPHOSPHATE (P) 0.004 0.011  
SPECIFIC CONDUCTANCE (MICROMHOS) 30 35  
WATER TEMPERATURE (DEG C) 21.2 10.6  
COLOR (PLATINUM-COBALT UNITS) 40 45  
SECCHI-DISC VISIBILITY (FT) 8  
DISSOLVED OXYGEN 8.7 0.6

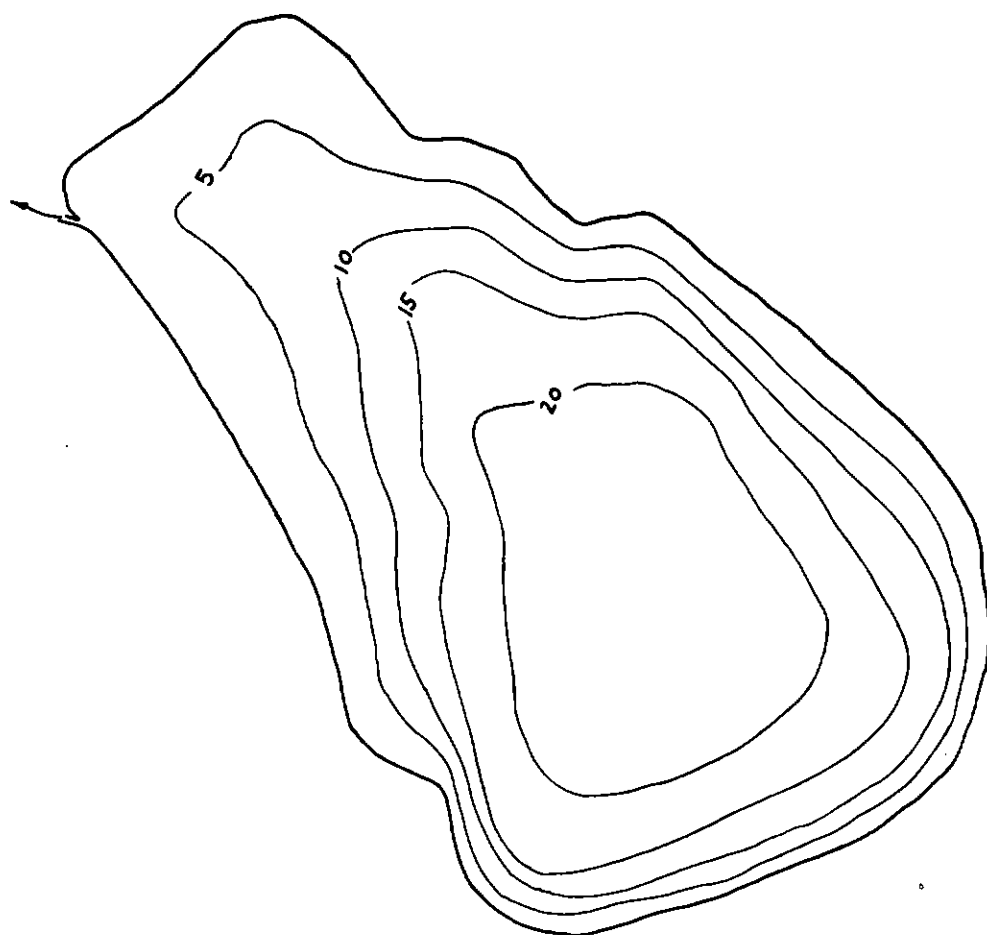
LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %

LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 8/12/74  
TIME 1615  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 5  
FECAL COLIFORM, MEAN (COL./100ML) 2

## REMARKS

-----  
EMERSED PLANTS COVERED MOST OF LAKE SHORELINE.



N



0 500 1000 FEET

EXPLANATION

— 10 —

Line of equal  
water depth  
Interval 5 feet

Wentworth Lake, Clallam County. From Washington Department of Game, July 1, 1958.





Wentworth Lake, Clallam County. July 16, 1971. Approx. scale 1:12,000.





ISLAND  
COUNTY



## CRANBERRY LAKE

## ISLAND COUNTY

LATITUDE 48°23'22" LONGITUDE 122°39'23" T34N-R1E-35  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.61 SQ MI  
 ALTITUDE 20. FT  
 LAKE AREA 130. ACRES  
 LAKE VOLUME 1600. ACRE-FT  
 MEAN DEPTH 13. FT  
 MAXIMUM DEPTH 25. FT  
 SHORELINE LENGTH 2.8 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.50  
 BOTTOM SLOPE 0.95 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URRAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 69 %  
 LAKE SURFACE 31 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

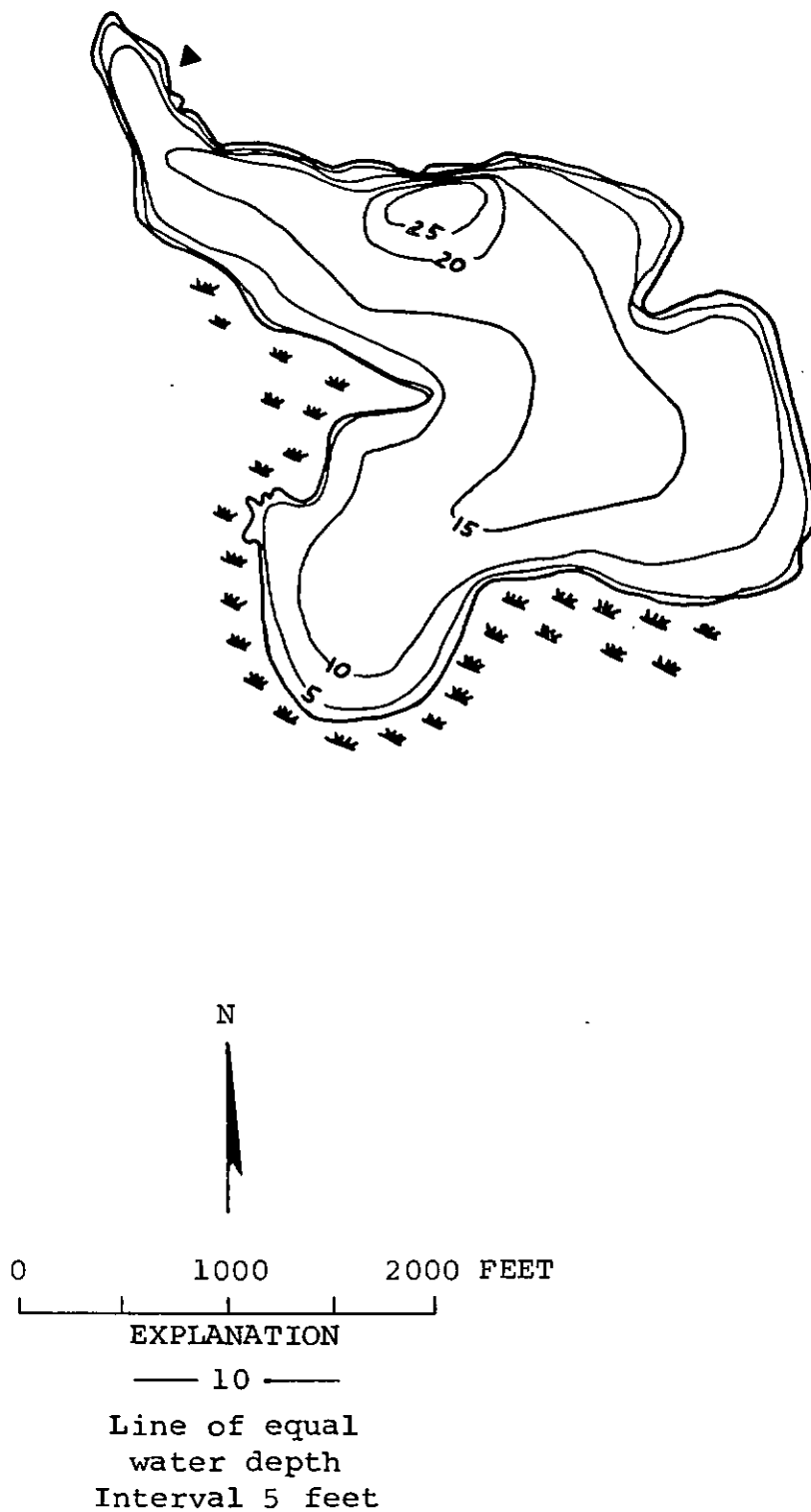
-----  
 SAMPLE SITE 1  
 DATE 8/ 9/74  
 TIME 1050 1055  
 DEPTH (FT) 3. 26.  
 TOTAL NITRATE (N) 0.00 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.15 1.5  
 TOTAL ORGANIC NITROGEN (N) 1.1 1.9  
 TOTAL PHOSPHORUS (P) 0.035 0.29  
 TOTAL ORTHOPHOSPHATE (P) 0.007 0.26  
 SPECIFIC CONDUCTANCE (MICROMHOS) 140 270  
 WATER TEMPERATURE (DEG C) 21.8 17.1  
 COLOR (PLATINUM-COBALT UNITS) 25 40  
 SECCHI-DISC VISIBILITY (FT) 7  
 DISSOLVED OXYGEN 8.8 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 9/74  
 TIME 1105  
 NUMBER OF FECAL COLIFORM SAMPLES 1  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 4  
 FECAL COLIFORM, MEAN (COL./100ML) 4

## REMARKS

-----  
 THE LAKE IS IN DECEPTION PASS STATE PARK. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Cranberry Lake, Island County. From Washington Department of Game, July 23, 1950.



Cranberry Lake, Island County. July 21, 1969. Approx. scale 1:12,000.

## CROCKETT LAKE

## ISLAND COUNTY

LATITUDE 48° 9'38" LONGITUDE 122°40'11" T31N-R1E-22  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 8.87 SQ MI  
 ALTITUDE 10. FT  
 LAKE AREA 190. ACRES  
 LAKE VOLUME (EST.) 410. ACRE-FT  
 MEAN DEPTH (EST.) 2. FT  
 MAXIMUM DEPTH 4. FT  
 SHORELINE LENGTH 3.0 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.55  
 BOTTOM SLOPE 0.12 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN <1 %  
 AGRICULTURAL 42 %  
 FOREST OR UNPRODUCTIVE 58 %  
 LAKE SURFACE <1 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/ 6/74  
 TIME 1430 1435  
 DEPTH (FT) 2. 3.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.02 0.02  
 TOTAL AMMONIA (N) 1.6 1.6  
 TOTAL ORGANIC NITROGEN (N) 0.06 1.2  
 TOTAL PHOSPHORUS (P) 0.36 0.37  
 TOTAL ORTHOPHOSPHATE (P) 0.19 0.19  
 SPECIFIC CONDUCTANCE (MICROMHOS) 47500 47500  
 WATER TEMPERATURE (DEG C) 20.5 20.0  
 COLOR (PLATINUM-COBALT UNITS) 160 140  
 SECCHI-DISC VISIBILITY (FT) 1  
 DISSOLVED OXYGEN 11.5 10.0

LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 6/74  
 TIME 1430  
 NUMBER OF FECAL COLIFORM SAMPLES 5  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 3  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 THE LAKE IS SALINE AND VERY SHALLOW. THE SURFACE AREA OF THE LAKE CHANGES CONSIDERABLY WITH LAKE STAGE. A LARGE POPULATION OF WATERFOWL WAS NOTED.



Crockett Lake, Island County. July 21, 1969. Approx. scale 1:12,000.

## DEER LAKE

## ISLAND COUNTY

LATITUDE 47°58'28" LONGITUDE 122°22'41" T29N-R3E-26  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.19 SQ MI  
 ALTITUDE 352. FT  
 LAKE AREA 81. ACRES  
 LAKE VOLUME 1700. ACRE-FT  
 MEAN DEPTH 20. FT  
 MAXIMUM DEPTH 50. FT  
 SHORELINE LENGTH 1.7 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.40  
 BOTTOM SLOPE 2.4 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 67 %  
 NUMBER OF NEARSHORE HOMES 43  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 5 %  
 AGRICULTURAL 15 %  
 FOREST OR UNPRODUCTIVE 69 %  
 LAKE SURFACE 11 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 1  
 6/26/73  
 TIME 1320 1330  
 DEPTH (FT) 3. 46.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.05 0.01  
 TOTAL ORGANIC NITROGEN (N) 0.08 0.15  
 TOTAL PHOSPHORUS (P) 0.011 0.026  
 TOTAL ORTHOPHOSPHATE (P) 0.002 0.005  
 SPECIFIC CONDUCTANCE (MICROMHOS) 66 64  
 WATER TEMPERATURE (DEG C) 19.0 8.0  
 COLOR (PLATINUM-COBALT UNITS) 10 10  
 SECCHI-DISC VISIBILITY (FT) 14  
 DISSOLVED OXYGEN 9.2 0.9

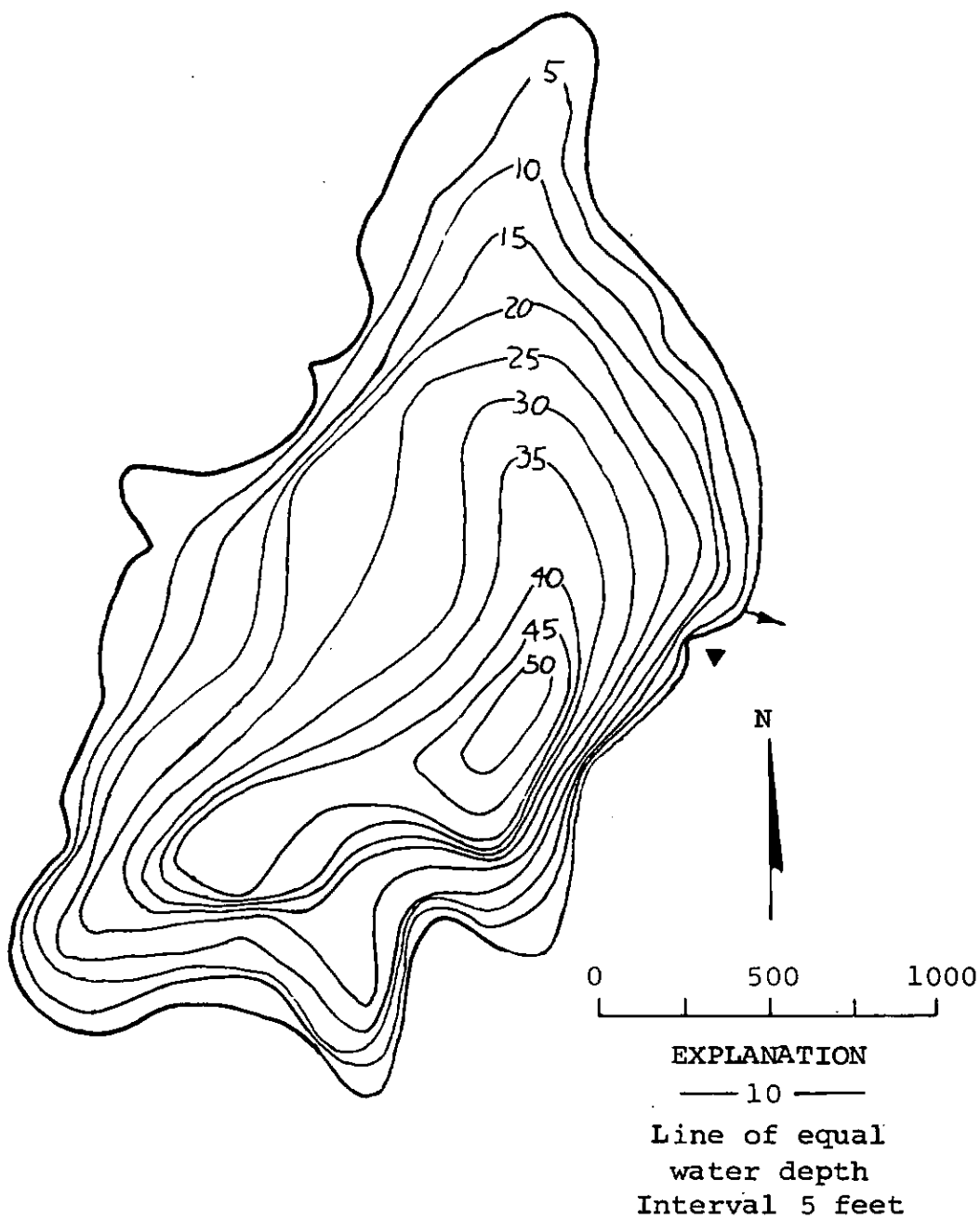
LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 6/26/73  
 TIME 1345  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 8  
 FECAL COLIFORM, MEAN (COL./100ML) 3

## REMARKS

-----  
 AN ALGAL BLOOM WAS OBSERVED. THE LAKE WAS SAMPLED FOUR TIMES IN 1973 BY  
 THE U.S. GEOLOGICAL SURVEY. THE PLANT SURVEY WAS DONE ON AUGUST 22, 1973.





Deer Lake, Island County. From Washington Department of Game, July 11, 1949.



Deer Lake, Island County. July 30, 1973. Approx. scale 1:4800.

## GOSS LAKE

## ISLAND COUNTY

LATITUDE 48° 2' 4" LONGITUDE 122°28'48" T29N-R3E-6  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.41 SQ MI  
 ALTITUDE 130. FT  
 LAKE AREA 47. ACRES  
 LAKE VOLUME 1500. ACRE-FT  
 MEAN DEPTH 32. FT  
 MAXIMUM DEPTH 60. FT  
 SHORELINE LENGTH 1.2 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.53  
 BOTTOM SLOPE 3.7 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 85 %  
 NUMBER OF NEARSHORE HOMES 36  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 4 %  
 AGRICULTURAL 1 %  
 FOREST OR UNPRODUCTIVE 90 %  
 LAKE SURFACE 5 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 6/26/73  
 TIME 1040 1050  
 DEPTH (FT) 3. 69.  
 TOTAL NITRATE (N) 0.01 0.30  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.06 0.06  
 TOTAL ORGANIC NITROGEN (N) 0.07 0.04  
 TOTAL PHOSPHORUS (P) 0.011 0.031  
 TOTAL ORTHOPHOSPHATE (P) 0.002 0.007  
 SPECIFIC CONDUCTANCE (MICROMHOS) 100 94  
 WATER TEMPERATURE (DEG C) 19.3 4.8  
 COLOR (PLATINUM-COBALT UNITS) 5 5  
 SECCHI-DISC VISIBILITY (FT) 14  
 DISSOLVED OXYGEN 9.4 1.7

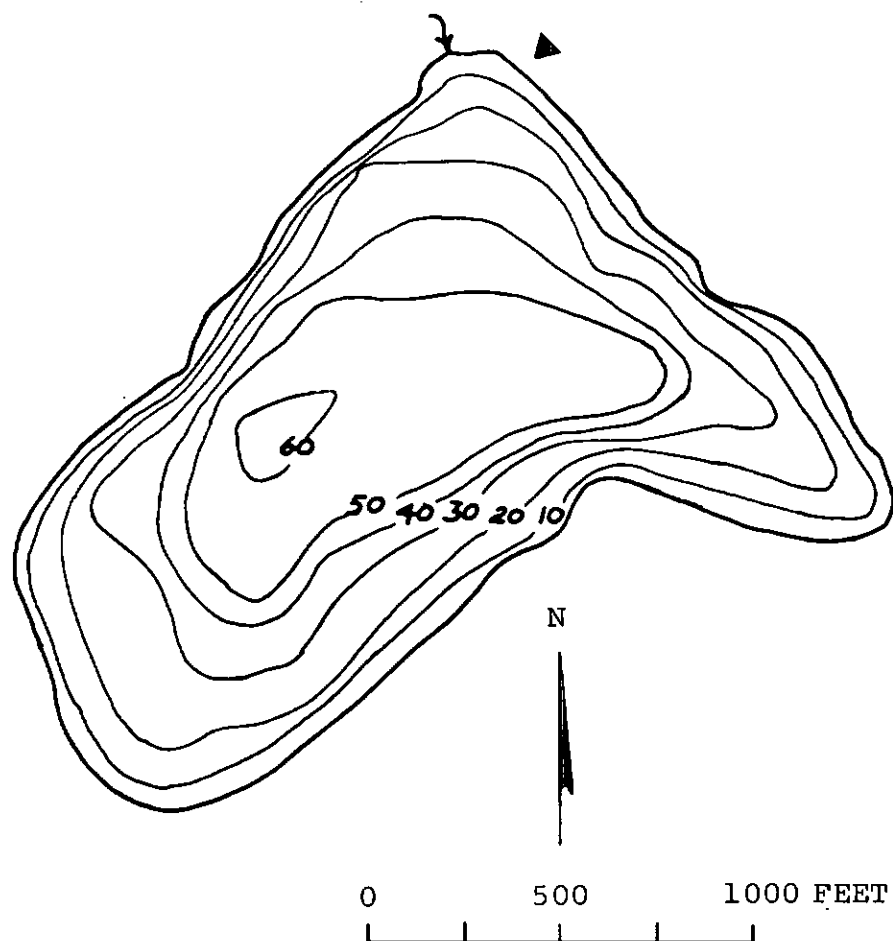
LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %

LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 6/26/73  
 TIME 1110  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 3  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 9  
 FECAL COLIFORM, MEAN (COL./100ML) 5

## REMARKS

-----  
 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S.GEOLOGICAL SURVEY IN 1973.  
 THE PLANT SURVEY WAS DONE ON AUGUST 22,1973.



EXPLANATION  
— 20 —  
Line of equal  
water depth  
Interval 10 feet

Goss Lake, Island County. From Washington Department of Game, January 23, 1949.



Goss Lake, Island County. July 30, 1973. Approx. scale 1:4800.

## KRISTOFERSON LAKE

## ISLAND COUNTY

LATITUDE 48°13'42" LONGITUDE 122°28'36" T32N-R3E-30  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.12 SQ MI  
 ALTITUDE 117. FT  
 LAKE AREA 53. ACRES  
 LAKE VOLUME 300. ACRE-FT  
 MEAN DEPTH 6. FT  
 MAXIMUM DEPTH 18. FT  
 SHORELINE LENGTH 1.3 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.31  
 BOTTOM SLOPE 1.0 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 7 %  
 NUMBER OF NEARSHORE HOMES 1  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 24 %  
 FOREST OR UNPRODUCTIVE 70 %  
 LAKE SURFACE 6 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/ 9/74  
 TIME 1255 1300  
 DEPTH (FT) 3. 13.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.01 0.01  
 TOTAL AMMONIA (N) 0.15 0.41  
 TOTAL ORGANIC NITROGEN (N) 1.2 1.2  
 TOTAL PHOSPHORUS (P) 0.036 0.075  
 TOTAL ORTHOPHOSPHATE (P) 0.006 0.033  
 SPECIFIC CONDUCTANCE (MICROMHOS) 160 145  
 WATER TEMPERATURE (DEG C) 20.0 17.4  
 COLOR (PLATINUM-COBALT UNITS) 55 70  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 7.8 1.2

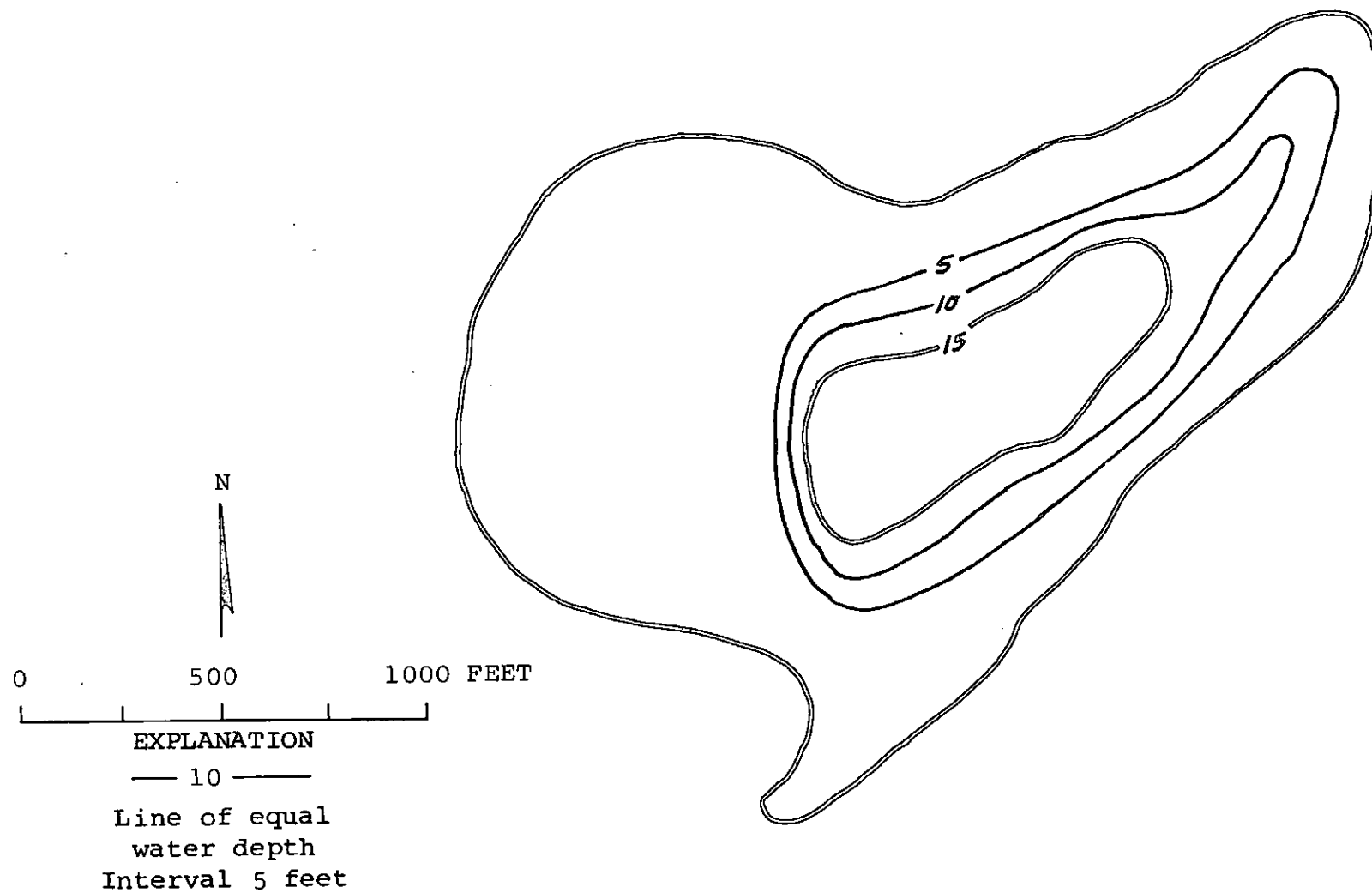
LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %

LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 8/ 7/74  
 TIME 1310  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 5  
 FECAL COLIFORM, MEAN (COL./100ML) 3

## REMARKS

-----  
 EMERSED PLANTS AS WELL AS LOGS AND SNAGS ENCIRCLED THE LAKE. AN ALGAL BLOOM WAS OBSERVED. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Kristoferson Lake, Island County. From U.S. Geological Survey, May 21, 1974.





Kristoferson Lake, Island County. June 16, 1969. Approx. scale 1:12,000.



## LONE LAKE

## ISLAND COUNTY

LATITUDE 48° 1' 8" LONGITUDE 122° 27' 48" T29N-R3E-7  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 2.80 SQ MI  
 ALTITUDE 17. FT  
 LAKE AREA 100. ACRES  
 LAKE VOLUME 920. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 17. FT  
 SHORELINE LENGTH 1.6 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.54  
 BOTTOM SLOPE 0.72 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 28 %  
 NUMBER OF NEARSHORE HOMES 16  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN <1 %  
 AGRICULTURAL 17 %  
 FOREST OR UNPRODUCTIVE 77 %  
 LAKE SURFACE 6 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

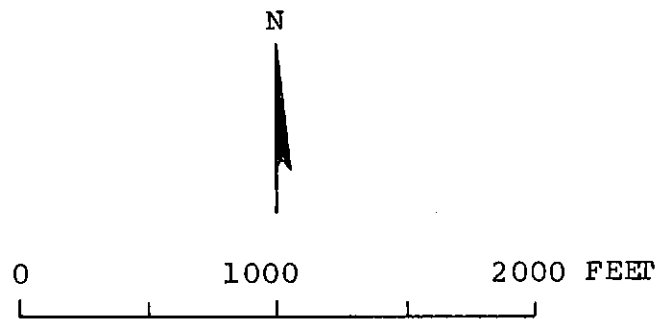
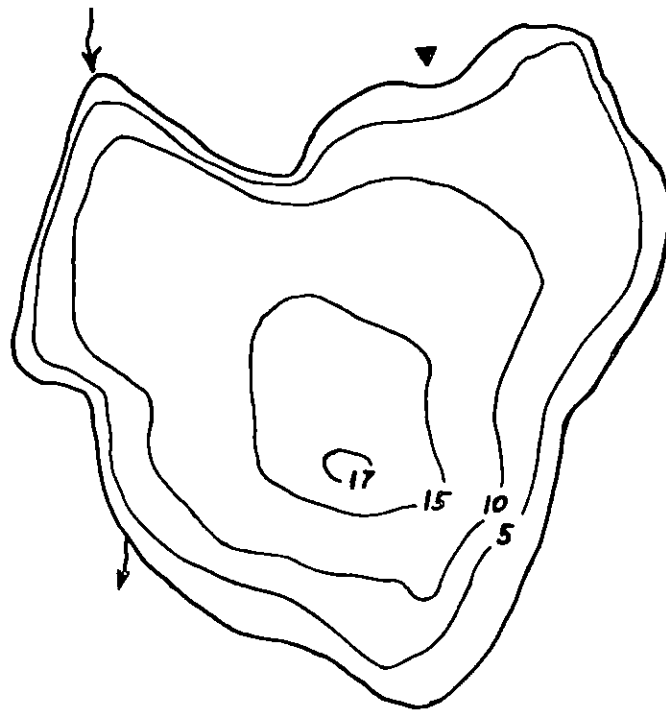
-----  
 DATE 8/ 5/74  
 TIME 1750 1755  
 DEPTH (FT) 3. 13.  
 TOTAL NITRATE (N) 0.02 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.33 0.89  
 TOTAL ORGANIC NITROGEN (N) 1.1 0.61  
 TOTAL PHOSPHORUS (P) 0.075 0.18  
 TOTAL ORTHOPHOSPHATE (P) 0.13 0.15  
 SPECIFIC CONDUCTANCE (MICROMHOS) 145 155  
 WATER TEMPERATURE (DEG C) 24.1 19.4  
 COLOR (PLATINUM-COBALT UNITS) 40 30  
 SECCHI-DISC VISIBILITY (FT) 2  
 DISSOLVED OXYGEN 14.0 0.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 5/74  
 TIME 1805  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 11  
 FECAL COLIFORM, MEAN (COL./100ML) 4

## REMARKS

-----  
 AN ALGAL BLOOM WAS OBSERVED. A TRACE OF HYDROGEN SULFIDE WAS DETECTED IN THE BOTTOM WATERS.



EXPLANATION  
 — 10 —  
 Line of equal  
 water depth  
 Interval 5 feet

Lone Lake, Island County. From Washington Department of Game, June 5, 1956.



Lone Lake, Island County. July 13, 1974. Approx. scale 1:4800.

## UNNAMED (31N-1E-6) LAKE

ISLAND COUNTY

LATITUDE 48°11'56" LONGITUDE 122°43'37" T31N-R1E-6  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.21 SQ MI  
 ALTITUDE 10. FT  
 LAKE AREA 39. ACRES  
 LAKE VOLUME 110. ACRE-FT  
 MEAN DEPTH 3. FT  
 MAXIMUM DEPTH 8. FT  
 SHORELINE LENGTH 1.6 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.34  
 BOTTOM SLOPE 0.54 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 71 %  
 LAKE SURFACE 29 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

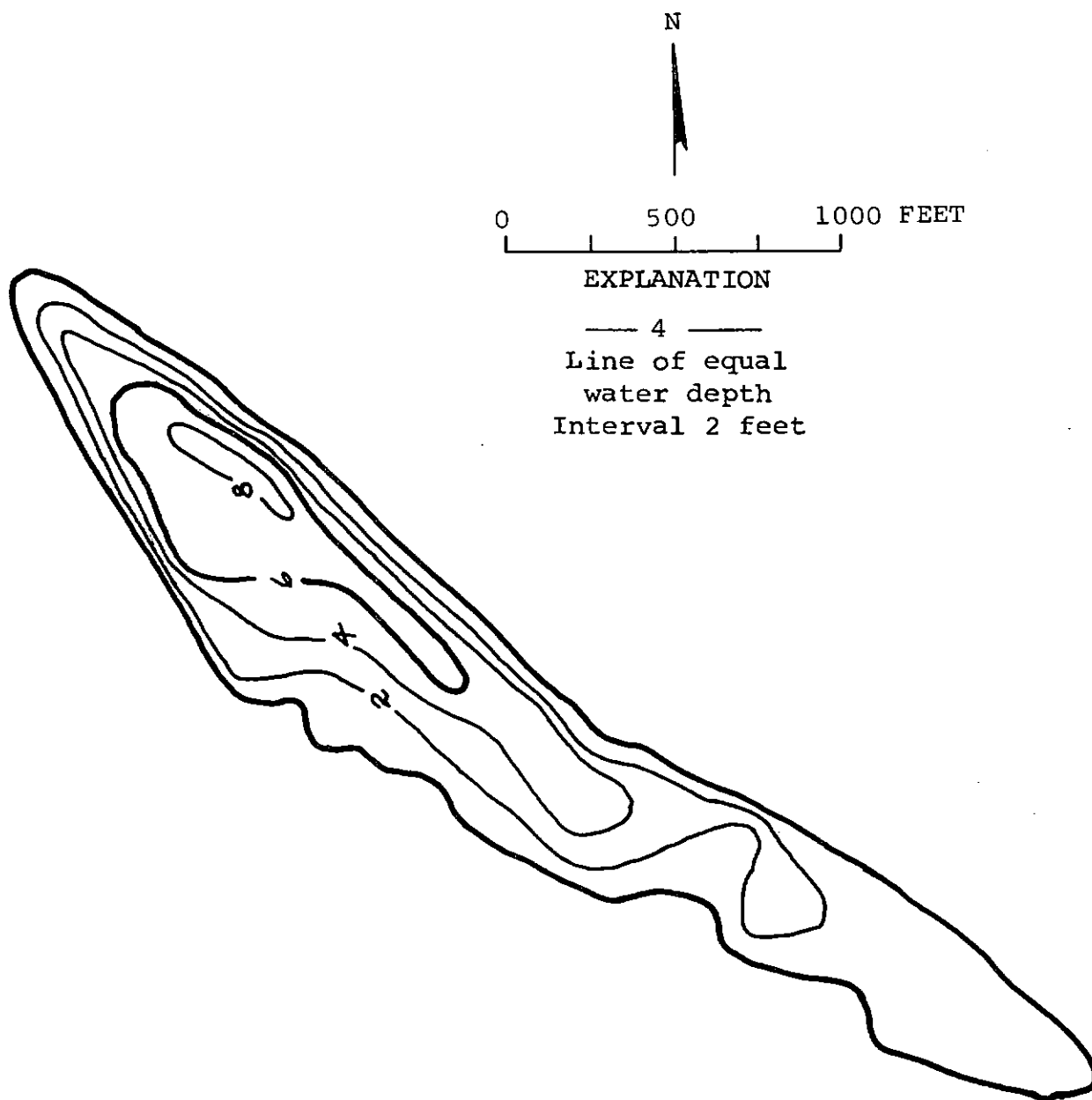
-----  
 SAMPLE SITE 1  
 DATE 8/ 6/74  
 TIME 1620 1625  
 DEPTH (FT) 2. 3.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.01 0.01  
 TOTAL AMMONIA (N) 1.6 1.6  
 TOTAL ORGANIC NITROGEN (N) 0.03 0.10  
 TOTAL PHOSPHORUS (P) 0.034 0.034  
 TOTAL ORTHOPHOSPHATE (P) 0.002 0.000  
 SPECIFIC CONDUCTANCE (MICROMHOS) 50000 50000  
 WATER TEMPERATURE (DEG C) 20.5 20.1  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) > 6  
 DISSOLVED OXYGEN 6.1 6.2

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 6/74  
 TIME 1700  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 A SALINE LAKE, FORMED BETWEEN A STEEP EROSION BANK AND A SAND DUNE BESIDE  
 ADMIRALTY INLET.



Unnamed (31N-1E-6) Lake, Island County. From U.S. Geological Survey, March 19, 1974.



Unnamed (31N-1E-6) Lake, Island County. July 21, 1969. Approx. scale 1:12,000.

## UNNAMED (33N-2E-7) LAKE

## ISLAND COUNTY

LATITUDE 48°21'22" LONGITUDE 122°35'50" T33N-R2E-7  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 7.63 SQ MI  
 ALTITUDE 0. FT  
 LAKE AREA 55. ACRES  
 LAKE VOLUME 400. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 33. FT  
 SHORELINE LENGTH 1.8 MI  
 SHORELINE CONFIGURATION 1.7  
 DEVELOPMENT OF VOLUME 0.22  
 BOTTOM SLOPE 1.9 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 3 %  
 RESIDENTIAL SUBURBAN 4 %  
 AGRICULTURAL 57 %  
 FOREST OR UNPRODUCTIVE 35 %  
 LAKE SURFACE 1 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/ 9/74  
 TIME 1150 1155  
 DEPTH (FT) 3. 26.  
 TOTAL NITRATE (N) 0.00 0.04  
 TOTAL NITRITE (N) 0.01 0.04  
 TOTAL AMMONIA (N) 0.07 37.  
 TOTAL ORGANIC NITROGEN (N) 0.86 --  
 TOTAL PHOSPHORUS (P) 0.050 5.6  
 TOTAL ORTHOPHOSPHATE (P) 0.012 5.6  
 SPECIFIC CONDUCTANCE (MICROMHOS) 7000 32000  
 WATER TEMPERATURE (DEG C) 20.0 12.7  
 COLOR (PLATINUM-COBALT UNITS) 10 300  
 SECCHI-DISC VISIBILITY (FT) 3  
 DISSOLVED OXYGEN 10.0 0.4

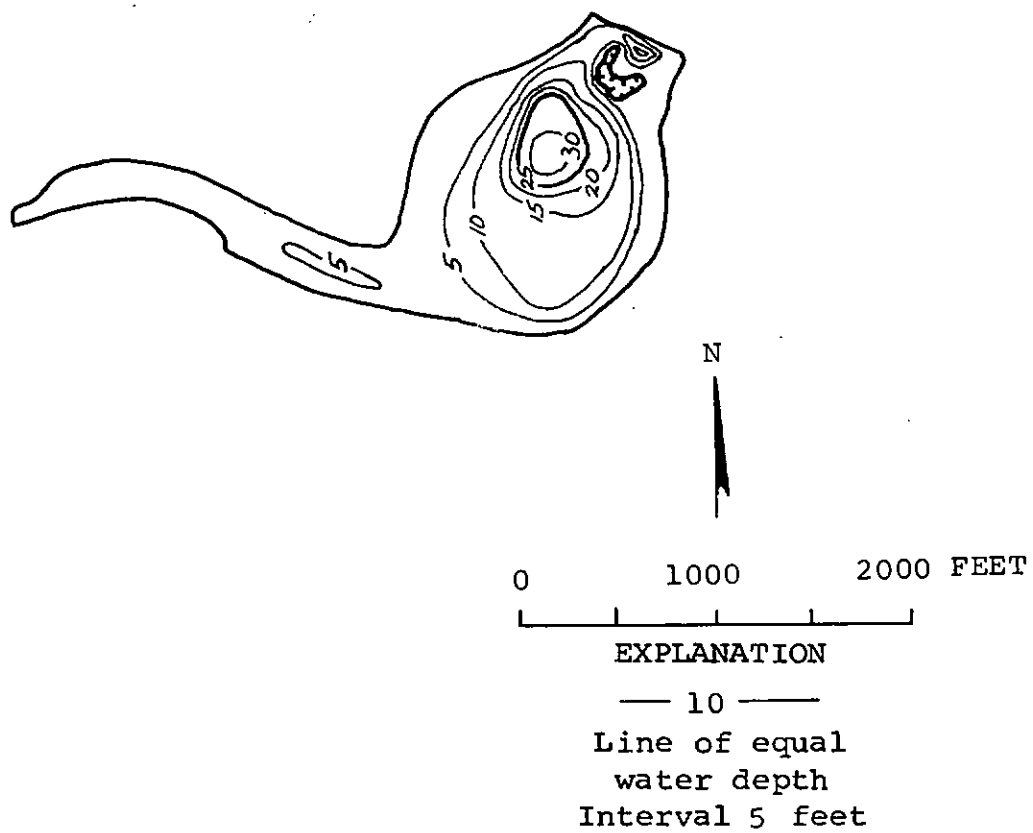
LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 9/74  
 TIME 1205  
 NUMBER OF FECAL COLIFORM SAMPLES 1  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 A BRACKISH TIDEWATER LAGOON KNOWN AS DUGUALLA BAY. THE LAGOON IS SEPARATED FROM SKAGIT BAY BY A TIDEWATER GAGE. HYDROGEN SULFIDE WAS DETECTED IN THE BOTTOM WATER. THE LITTORAL BOTTOM IS MOSTLY MUCK OR SILT AND MUCK. STORM RUNOFF FROM THE NAVAL AIR STATION ENTERS THE CREEK TO DUGUALLA BAY. NO DATA ARE AVAILABLE ON WASTEWATER CONSTITUENTS (DEPT. OF ECOLOGY WASTEWATER-DISCHARGE MASTER INVENTORY).





Unnamed (33N-2E-7) Lake, Island County. From U.S. Geological Survey, March 20, 1974.



Unnamed (33N-2E-7) Lake, Island County. June 16, 1969. Approx. scale 1:12,000.



JEFFERSON  
COUNTY



## ANDERSON LAKE

## JEFFERSON COUNTY

LATITUDE 48° 0'54" LONGITUDE 122°48' 4" T29N-R1W-9  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.40 SQ MI  
 ALTITUDE 250. FT  
 LAKE AREA 66. ACRES  
 LAKE VOLUME 1200. ACRE-FT  
 MEAN DEPTH 19. FT  
 MAXIMUM DEPTH 29. FT  
 SHOPELINE LENGTH 1.5 MI  
 SHOPELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.64  
 BOTTOM SLOPE 1.5 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 2 %  
 NUMBER OF NEARSHORE HOMES 1  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URRAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 7 %  
 FOREST OR UNPRODUCTIVE 86 %  
 LAKE SURFACE 7 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

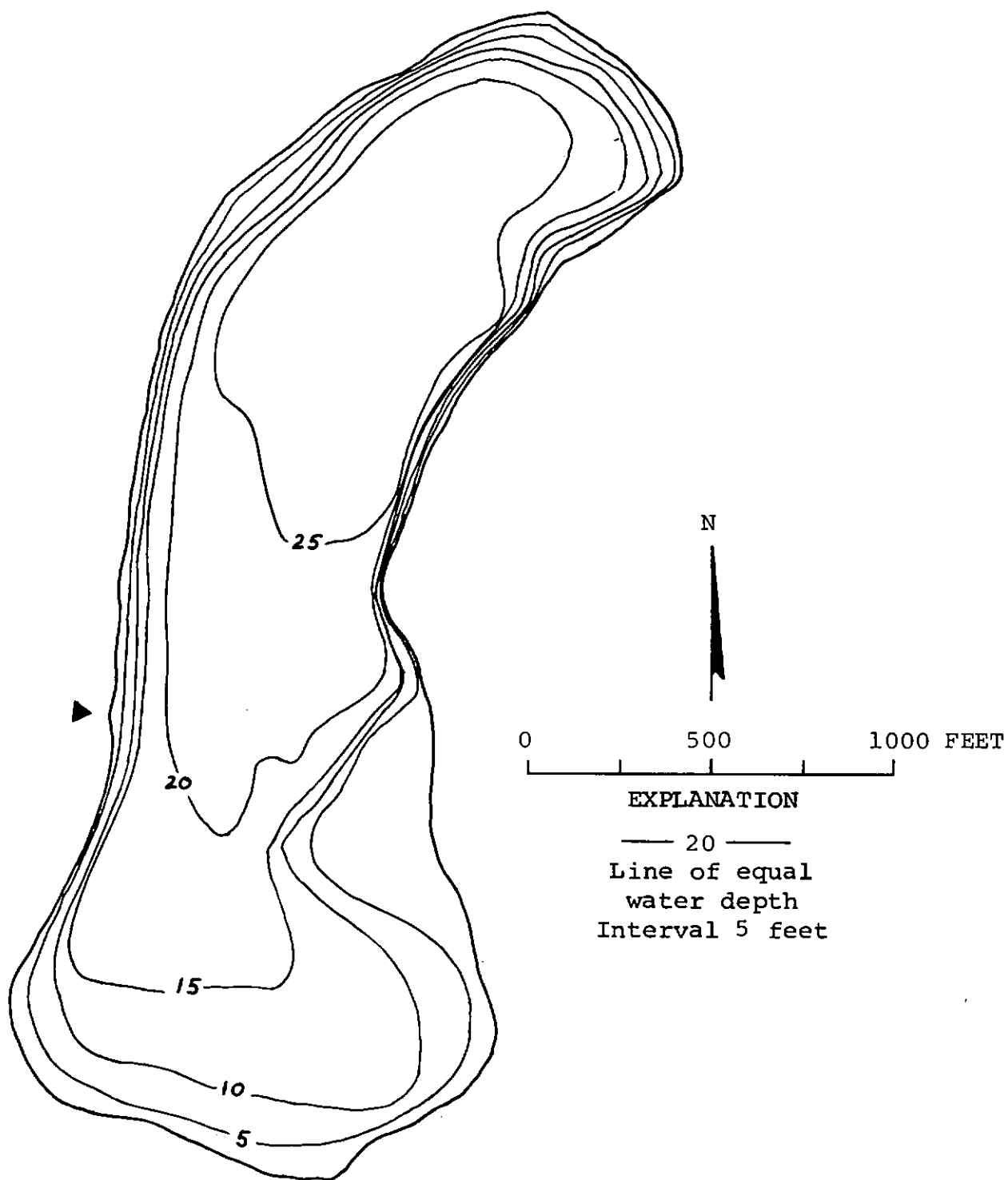
-----  
 DATE 8/ 6/74  
 TIME 1130 1135  
 DEPTH (FT) 3. 20.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.01 0.00  
 TOTAL AMMONIA (N) 0.27 0.42  
 TOTAL ORGANIC NITROGEN (N) 1.5 1.2  
 TOTAL PHOSPHORUS (P) 0.060 0.041  
 TOTAL ORTHOPHOSPHATE (P) 0.008 0.000  
 SPECIFIC CONDUCTANCE (MICROMHOS) 195 175  
 WATER TEMPERATURE (DEG C) 21.8 15.0  
 COLOR (PLATINUM-COBALT UNITS) 25 35  
 SECCHI-DISC VISIBILITY (FT) 8  
 DISSOLVED OXYGEN 6.8 0.0

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 6/74  
 TIME 1100  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 5  
 FECAL COLIFORM, MEAN (COL./100ML) 2

## REMARKS

-----  
 A HIGH ALGAL DENSITY WAS NOTED. EMERSED PLANTS COVERED MOST OF THE SHORELINE, ESPECIALLY ON THE SOUTH END OF THE LAKE. FLOATING LOGS WERE ALONG THE NORTH SHORE. THE LITTORAL BOTTOM IS A VERY SOFT OOZE OR MUCK.



Anderson Lake, Jefferson County. From County Engineer, July 1924.





Anderson Lake, Jefferson County. July 13, 1974. Approx. scale 1:4800.

## CROCKER LAKE

## JEFFERSON COUNTY

LATITUDE 47°56'22" LONGITUDE 122°52'45" T28N-R2W-12  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 2.59 SQ MI  
 ALTITUDE 190. FT  
 LAKE AREA 76. ACRES  
 LAKE VOLUME 660. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 13. FT  
 SHORELINE LENGTH 1.3 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.67  
 BOTTOM SLOPE 0.63 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 8 %  
 NUMBER OF NEARSHORE HOMES 2  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 5 %  
 FOREST OR UNPRODUCTIVE 90 %  
 LAKE SURFACE 5 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

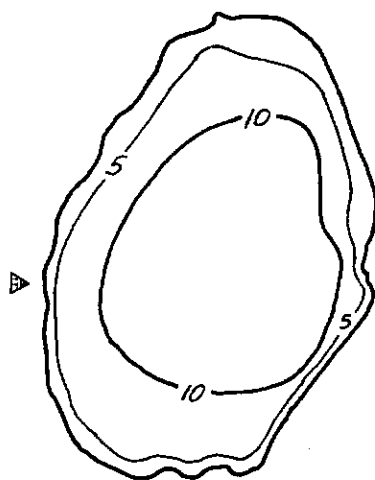
-----  
 DATE 8/ 5/74  
 TIME 1420 1425  
 DEPTH (FT) 3. 8.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.12 0.11  
 TOTAL ORGANIC NITROGEN (N) 0.46 0.55  
 TOTAL PHOSPHORUS (P) 0.041 0.050  
 TOTAL ORTHOPHOSPHATE (P) 0.010 0.011  
 SPECIFIC CONDUCTANCE (MICROMHOS) 72 73  
 WATER TEMPERATURE (DEG C) 23.7 23.7  
 COLOR (PLATINUM-COBALT UNITS) 40 40  
 SECCHI-DISC VISIBILITY (FT) 8  
 DISSOLVED OXYGEN 7.8 7.9

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 5/74  
 TIME 1430  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 7  
 FECAL COLIFORM, MEAN (COL./100ML) 3

## REMARKS

-----  
 AN ALGAL BLOOM WAS OBSERVED. EMERSED PLANTS COVERED MOST OF SHORELINE.  
 THE LITTORAL BOTTOM IS MOSTLY SOFT MUCK.



0 1000 2000 FEET

EXPLANATION

— 10 —

Line of equal  
water depth  
Interval 5 feet

Crocker Lake, Jefferson County. From U.S. Geological Survey, April 2, 1974.



Crocker Lake, Jefferson County. July 13, 1974. Approx. scale 1:4800.

## GIBBS LAKE

## JEFFERSON COUNTY

LATITUDE 47°58'38" LONGITUDE 122°48'48" T29N-R1W-28  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.23 SQ MI  
 ALTITUDE 340. FT  
 LAKE AREA 44. ACRES  
 LAKE VOLUME 1200. ACRE-FT  
 MEAN DEPTH 27. FT  
 MAXIMUM DEPTH 47. FT  
 SHORELINE LENGTH 1.4 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.56  
 BOTTOM SLOPE 3.0 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 6 %  
 NUMBER OF NEARSHORE HOMES 3  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN <1 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 94 %  
 LAKE SURFACE 6 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

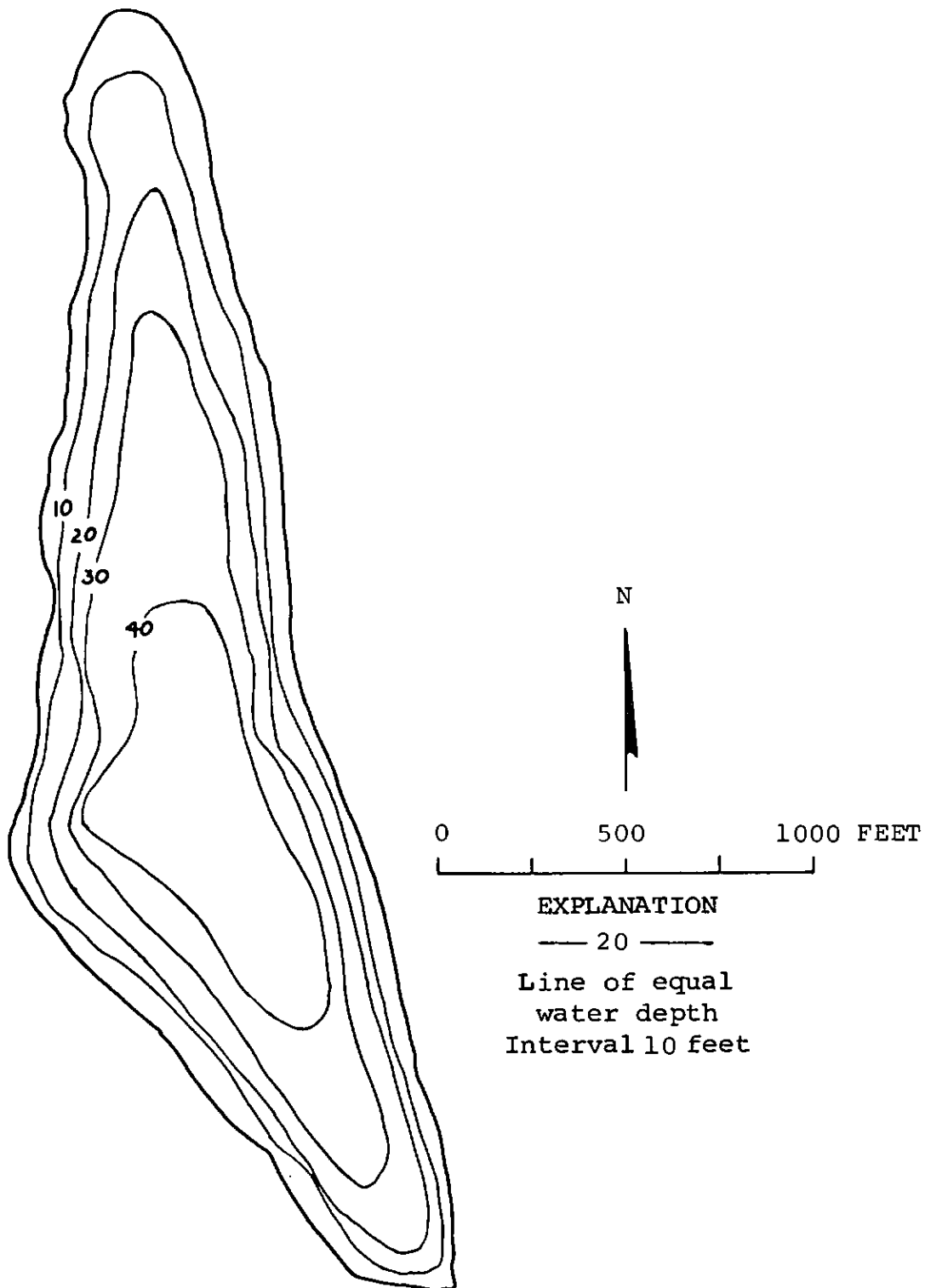
-----  
 SAMPLE SITE 1  
 DATE 8/ 5/74  
 TIME 1700 1705  
 DEPTH (FT) 3. 33.  
 TOTAL NITRATE (N) 0.01 0.48  
 TOTAL NITRITE (N) 0.01 0.01  
 TOTAL AMMONIA (N) 0.09 0.23  
 TOTAL ORGANIC NITROGEN (N) 0.67 0.32  
 TOTAL PHOSPHORUS (P) 0.023 0.030  
 TOTAL ORTHOPHOSPHATE (P) 0.008 0.014  
 SPECIFIC CONDUCTANCE (MICROMHOS) 69 69  
 WATER TEMPERATURE (DEG C) 24.0 9.0  
 COLOR (PLATINUM-COBALT UNITS) 40 45  
 SECCHI-DISC VISIBILITY (FT) 5  
 DISSOLVED OXYGEN 10.4 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 5/74  
 TIME 1710  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 2  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 3  
 FECAL COLIFORM, MEAN (COL./100ML) 2

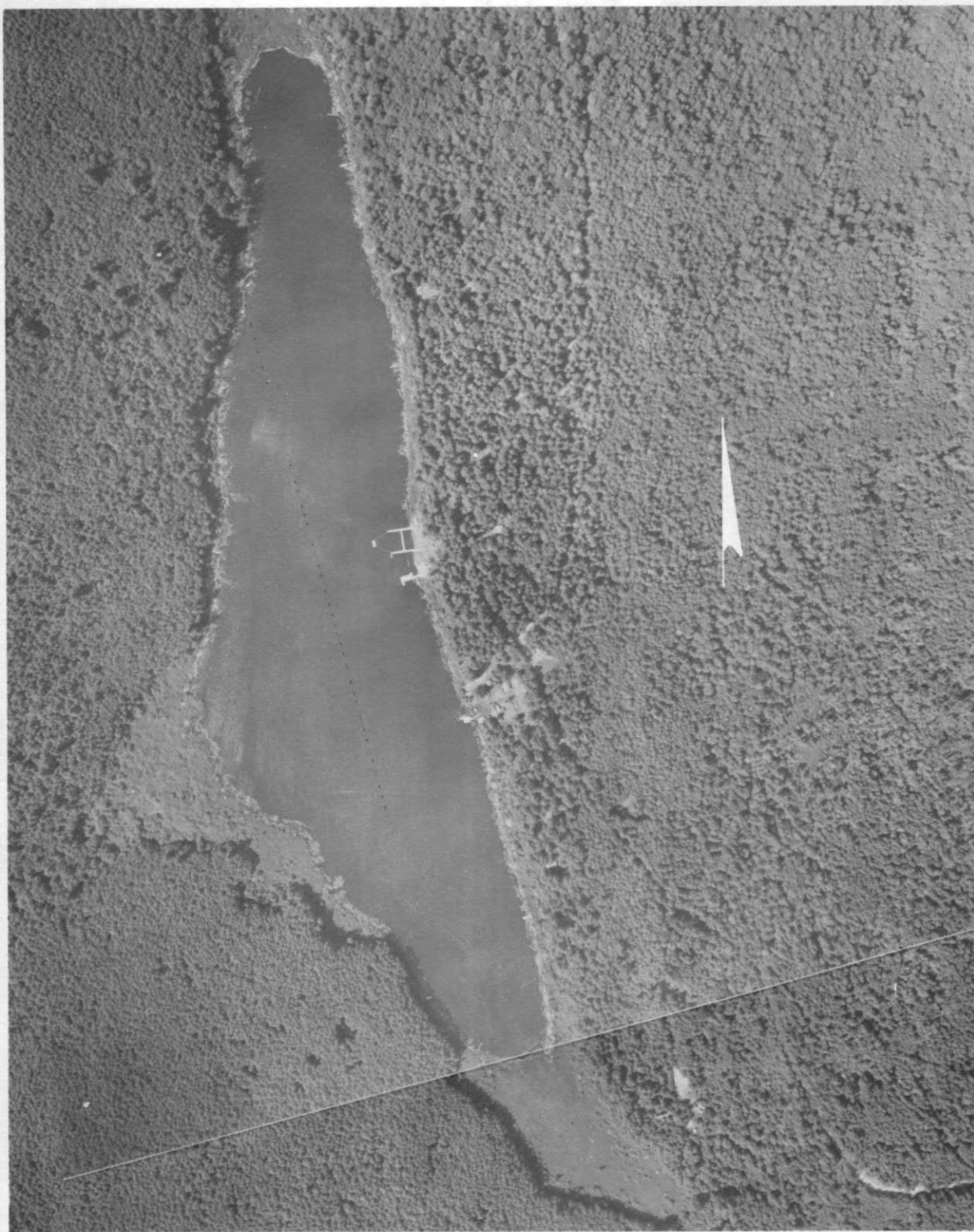
## REMARKS

-----  
 THE EAST LAKESHORE IS OCCUPIED BY A BOY SCOUT CAMP. AN ALGAL BLOOM WAS OBSERVED. EMERSED PLANTS COVERED MOST OF THE SHORELINE. NUMEROUS LOGS AND SNAGS ARE SCATTERED ALONG THE MARGIN OF THE LAKE. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Gibbs Lake, Jefferson County. From County Engineer, January 1926.





Gibbs Lake, Jefferson County. July 13, 1974. Approx. scale 1:4800.



## KAH TAI LAKE

## JEFFERSON COUNTY

LATITUDE 48° 6' 28" LONGITUDE 122° 46' 46" T30N-R1W-10  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 1.39 SQ MI  
 ALTITUDE 5. FT  
 LAKE AREA 30. ACRES  
 LAKE VOLUME 50. ACRE-FT  
 MEAN DEPTH 2. FT  
 MAXIMUM DEPTH 2. FT  
 SHORELINE LENGTH 0.93 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.93  
 BOTTOM SLOPE 0.14 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 5 %  
 RESIDENTIAL SUBURBAN 14 %  
 AGRICULTURAL 36 %  
 FOREST OR UNPRODUCTIVE 42 %  
 LAKE SURFACE 3 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/ 6/74  
 TIME 1300 1305  
 DEPTH (FT) 0. 1.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.02 0.02  
 TOTAL AMMONIA (N) 0.68 0.58  
 TOTAL ORGANIC NITROGEN (N) 3.2 3.3  
 TOTAL PHOSPHORUS (P) 1.2 1.3  
 TOTAL ORTHOPHOSPHATE (P) 0.96 1.0  
 SPECIFIC CONDUCTANCE (MICROMHOS) 25000 25000  
 WATER TEMPERATURE (DEG C) 20.0 19.8  
 COLOR (PLATINUM-COBALT UNITS) 260 260  
 SECCHI-DISC VISIBILITY (FT) 1  
 DISSOLVED OXYGEN 9.4 9.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 6/74  
 TIME 1310  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 4  
 FECAL COLIFORM, MEAN (COL./100ML) 2

## REMARKS

-----  
 A SHALLOW SALINE LAGOON LOCATED ON SOUTHWEST SIDE OF PORT TOWNSEND. THE  
 WATER WAS TURBID. THE ENTIRE LAKE BOTTOM WAS COVERED WITH AQUATIC PLANTS.



Kah Tai Lake, Jefferson County. Bathymetric map from  
U.S. Geological Survey, September 1974. Aerial photo, May 4, 1972.

## LELAND LAKE

## JEFFERSON COUNTY

LATITUDE 47°53'12" LONGITUDE 122°53' 5" T28N-R2W-26  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 5.71 SQ MI  
 ALTITUDE 190. FT  
 LAKE AREA 110. ACRES  
 LAKE VOLUME 1400. ACRE-FT  
 MEAN DEPTH 13. FT  
 MAXIMUM DEPTH 20. FT  
 SHORELINE LENGTH 2.7 MI  
 SHORELINE CONFIGURATION 1.9  
 DEVELOPMENT OF VOLUME 0.66  
 BOTTOM SLOPE 0.82 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 17 %  
 NUMBER OF NEARSHORE HOMES 12  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 10 %  
 FOREST OR UNPRODUCTIVE 87 %  
 LAKE SURFACE 3 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

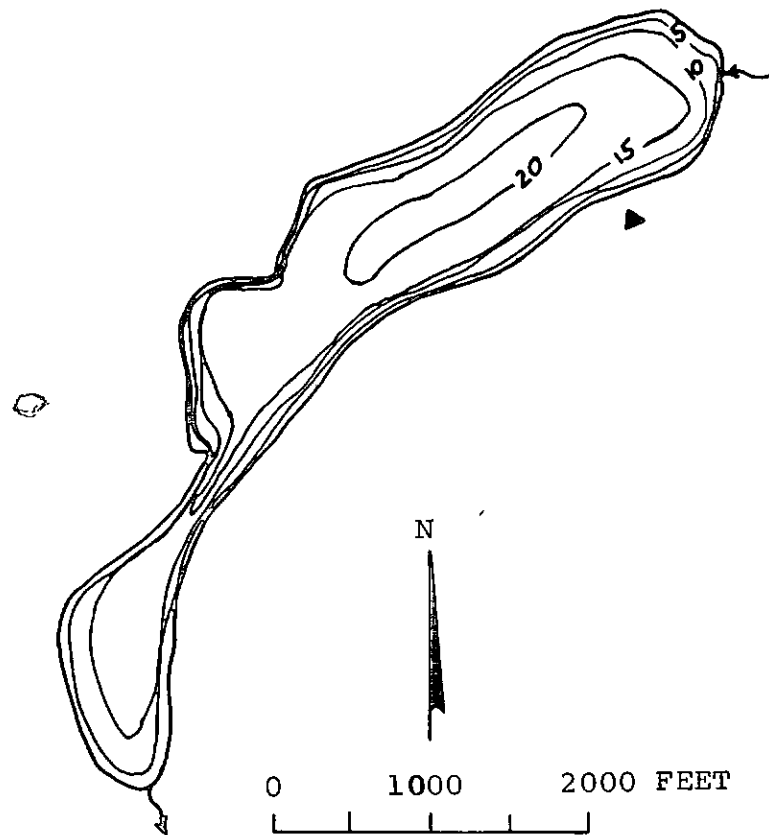
-----  
 SAMPLE SITE 1  
 DATE 8/ 5/74  
 TIME 1555 1600  
 DEPTH (FT) 3. 16.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.07 0.35  
 TOTAL ORGANIC NITROGEN (N) 0.82 0.53  
 TOTAL PHOSPHORUS (P) 0.061 0.091  
 TOTAL ORTHOPHOSPHATE (P) 0.008 0.064  
 SPECIFIC CONDUCTANCE (MICROMHOS) 70 83  
 WATER TEMPERATURE (DEG C) 25.0 16.2  
 COLOR (PLATINUM-COBALT UNITS) 40 55  
 SECCHI-DISC VISIBILITY (FT) 8  
 DISSOLVED OXYGEN 8.8 0.3

LAKE SHORELINE COVERED BY EMERSED PLANTS 10- 25 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 5/74  
 TIME 1605  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 11  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 17  
 FECAL COLIFORM, MEAN (COL./100ML) 13

## REMARKS

-----  
 THE WATER WAS A BROWN COLOR. A HIGH ALGAL DENSITY WAS OBSERVED. THE  
 LITTORAL BOTTOM IS MOSTLY SILT AND MUCK.



0 1000 2000 FEET

EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 5 feet

Leland Lake, Jefferson County. From Washington Department of Game, June 19, 1952.



Leland Lake, Jefferson County. May 28, 1972. Approx. scale 1:12,000.

## LORDS LAKE

## JEFFERSON COUNTY

LATITUDE 47°52'53" LONGITUDE 122°55'51" T28W-R2W-33  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.44 SQ MI  
ALTITUDE 920. FT  
LAKE AREA 37. ACRES  
LAKE VOLUME 740. ACRE-FT  
MEAN DEPTH 20. FT  
MAXIMUM DEPTH 37. FT  
SHORELINE LENGTH 1.5 MI  
SHORELINE CONFIGURATION 1.8  
DEVELOPMENT OF VOLUME 0.54  
BOTTOM SLOPE 2.6 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 87 %  
LAKE SURFACE 13 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/ 5/74  
TIME 1450 1455  
DEPTH (FT) 3. 20.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.03  
TOTAL ORGANIC NITROGEN (N) 0.05 0.10  
TOTAL PHOSPHORUS (P) 0.003 0.007  
TOTAL ORTHOPHOSPHATE (P) 0.003 0.003  
SPECIFIC CONDUCTANCE (MICROMHOS) 110 110  
WATER TEMPERATURE (DEG C) 21.3 14.8  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) >25  
DISSOLVED OXYGEN 8.8 10.2

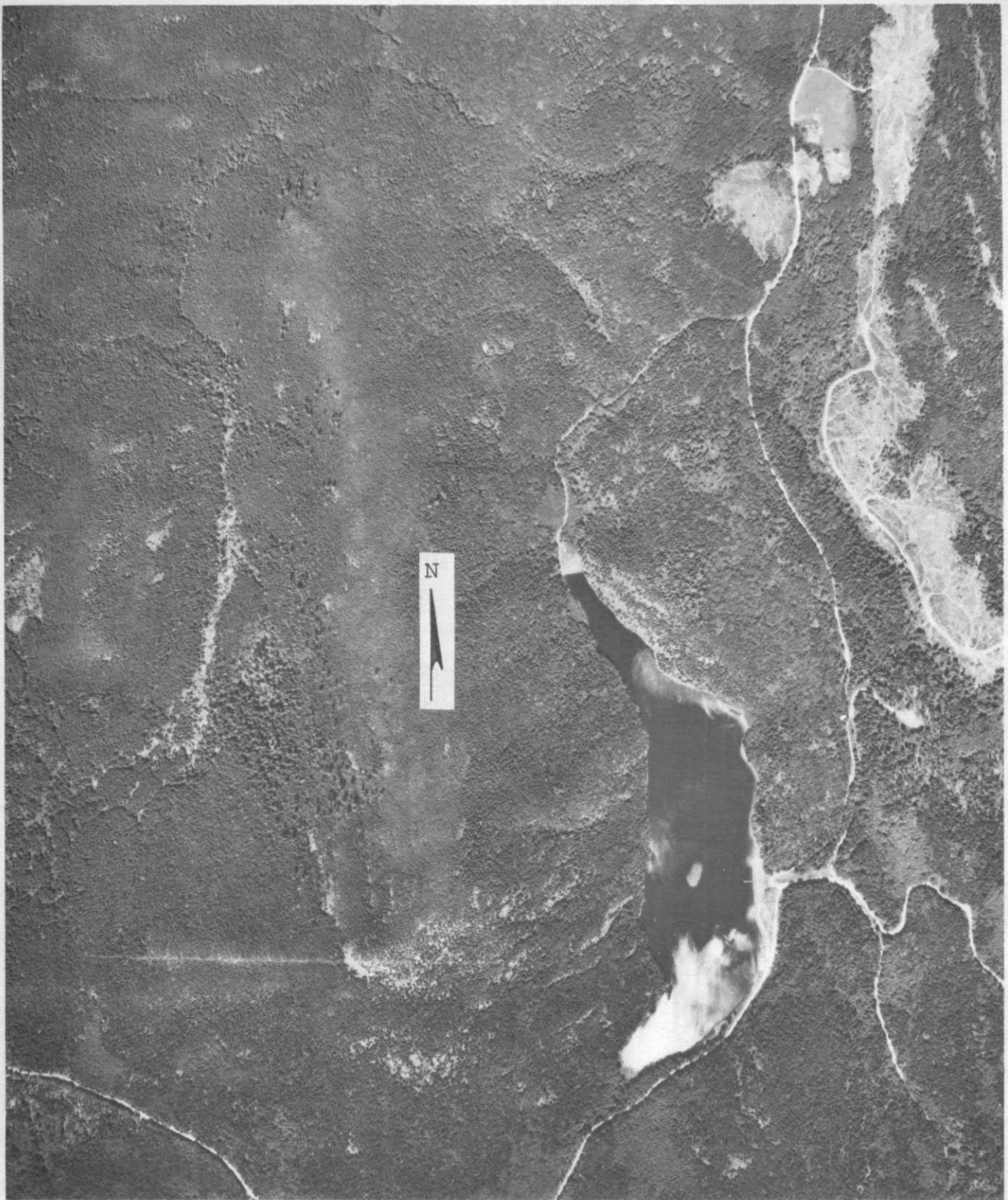
LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 5/74  
TIME 1500  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
PUBLIC WATER-SUPPLY RESERVOIR FOR THE CITY OF PORT TOWNSEND. VERY FEW  
ROOTED AQUATIC PLANTS WERE OBSERVED. THE WATER CLARITY WAS HIGH AND DO  
WAS NEAR SATURATION THROUGHOUT THE WATER COLUMN.





Lords Lake, Jefferson County. May 28, 1972. Approx. scale 1:12,000.



## PETERSON LAKE

## JEFFERSON COUNTY

LATITUDE 47°56'53" LONGITUDE 122°50'59" T28W-R1W-6  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.52 SQ MI  
 ALTITUDE 500. FT  
 LAKE AREA 25. ACRES  
 LAKE VOLUME 720. ACRE-FT  
 MEAN DEPTH 29. FT  
 MAXIMUM DEPTH 60. FT  
 SHORELINE LENGTH 0.82 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.48  
 BOTTOM SLOPE 5.1 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 3 %  
 NUMBER OF NEARSHORE HOMES 1  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 2 %  
 FOREST OR UNPRODUCTIVE 90 %  
 LAKE SURFACE 8 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

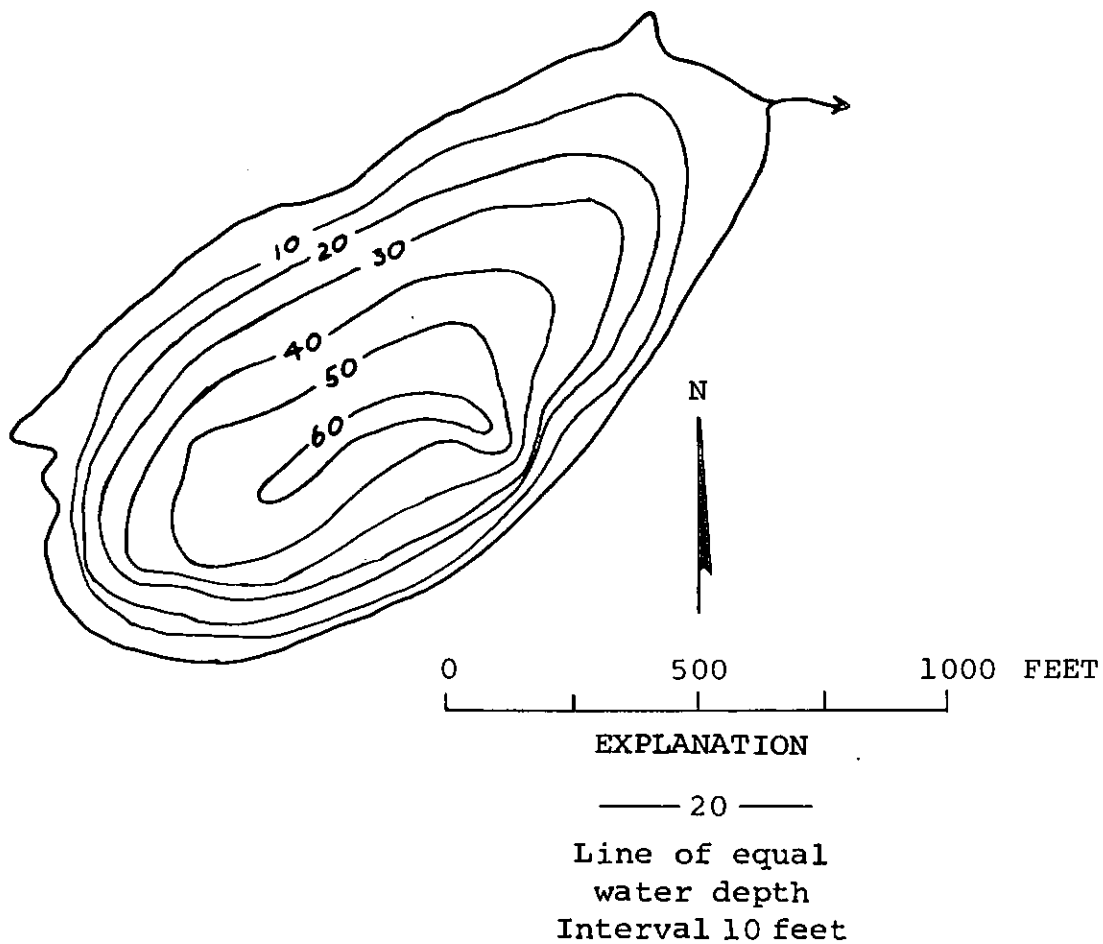
-----  
 DATE 8/ 5/74  
 TIME 1600 1605  
 DEPTH (FT) 3. 49.  
 TOTAL NITRATE (N) 0.17 0.82  
 TOTAL NITRITE (N) 0.01 0.00  
 TOTAL AMMONIA (N) 0.07 0.08  
 TOTAL ORGANIC NITROGEN (N) 0.45 0.40  
 TOTAL PHOSPHORUS (P) 0.009 0.013  
 TOTAL ORTHOPHOSPHATE (P) 0.005 0.004  
 SPECIFIC CONDUCTANCE (MICROMHOS) 55 55  
 WATER TEMPERATURE (DEG C) 24.8 4.8  
 COLOR (PLATINUM-COBALT UNITS) 10 15  
 SECCHI-DISC VISIBILITY (FT) 10  
 DISSOLVED OXYGEN 9.2 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 5/74  
 TIME 1610  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 3  
 FECAL COLIFORM, MEAN (COL./100ML) 2

## REMARKS

-----  
 EMERSED AQUATIC PLANTS COVERED MOST OF THE SHORELINE. THE LITTORAL BOTTOM IS MOSTLY MUCK. LOGS AND SNAGS ARE SCATTERED ALONG THE SHORE.



Peterson Lake, Jefferson County. From Washington Department of Game, August 28, 1946.



Peterson Lake, Jefferson County. July 13, 1974. Approx. scale 1:4800.

## SANDY SHORE LAKE

## JEFFERSON COUNTY

LATITUDE 47°53'18" LONGITUDE 122°45'45" T28N-R1W-26  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.52 SQ MI  
 ALTITUDE 470. FT  
 LAKE AREA 59. ACRES  
 LAKE VOLUME 1200. ACRE-FT  
 MEAN DEPTH 20. FT  
 MAXIMUM DEPTH 64. FT  
 SHORELINE LENGTH 1.3 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.31  
 BOTTOM SLOPE 3.5 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLF  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 82 %  
 LAKE SURFACE 18 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

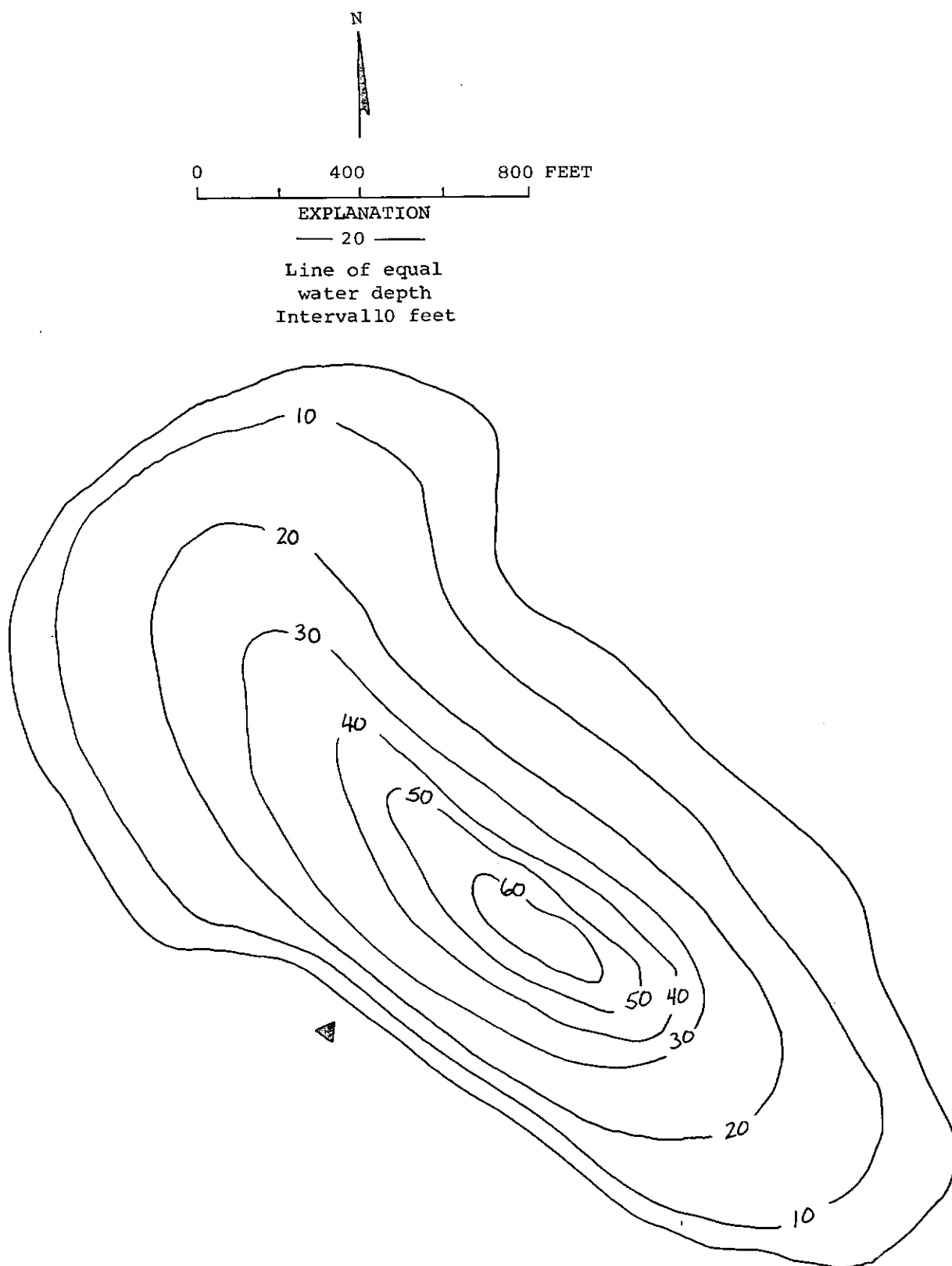
-----  
 DATE 8/ 5/74  
 TIME 1345 1350  
 DEPTH (FT) 3. 52.  
 TOTAL NITRATE (N) 0.07 0.27  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.05 0.12  
 TOTAL ORGANIC NITROGEN (N) 0.26 0.16  
 TOTAL PHOSPHORUS (P) 0.009 0.013  
 TOTAL ORTHOPHOSPHATE (P) 0.004 0.007  
 SPECIFIC CONDUCTANCE (MICROMHOS) 25 30  
 WATER TEMPERATURE (DEG C) 24.2 7.7  
 COLOR (PLATINUM-COBALT UNITS) 5 5  
 SECCHI-DISC VISIBILITY (FT) 15  
 DISSOLVED OXYGEN 8.4 2.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 5/74  
 TIME 1355  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 2  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 22  
 FECAL COLIFORM, MEAN (COL./100ML) 9

## REMARKS

-----  
 LOGS AND SNAGS ARE SCATTERED ALONG THE SHORELINE.



Sandy Shore Lake, Jefferson County. From University of Washington, 1938.



Sandy Shore Lake, Jefferson County. May 4, 1972. Approx. scale 1:12,000.

## TARBOO LAKE

## JEFFERSON COUNTY

LATITUDE 47°55'16" LONGITUDE 122°50'55" T28N-R1W-18  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.25 SQ MI  
 ALTITUDE 640. FT  
 LAKE AREA 24. ACRES  
 LAKE VOLUME 680. ACRE-FT  
 MEAN DEPTH 28. FT  
 MAXIMUM DEPTH 58. FT  
 SHORELINE LENGTH 0.97 MI  
 SHORELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.49  
 BOTTOM SLOPE 5.0 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 85 %  
 LAKE SURFACE 15 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/ 5/74  
 TIME 1300 1305  
 DEPTH (FT) 3. 52.  
 TOTAL NITRATE (N) 0.07 0.45  
 TOTAL NITRITE (N) 0.01 0.03  
 TOTAL AMMONIA (N) 0.06 0.24  
 TOTAL ORGANIC NITROGEN (N) 0.35 0.31  
 TOTAL PHOSPHORUS (P) 0.010 0.018  
 TOTAL ORTHOPHOSPHATE (P) 0.010 0.005  
 SPECIFIC CONDUCTANCE (MICROMHOS) 38 44  
 WATER TEMPERATURE (DEG C) 24.2 7.0  
 COLOR (PLATINUM-COBALT UNITS) 15 15  
 SECCHI-DISC VISIBILITY (FT) 12  
 DISSOLVED OXYGEN 9.1 0.0

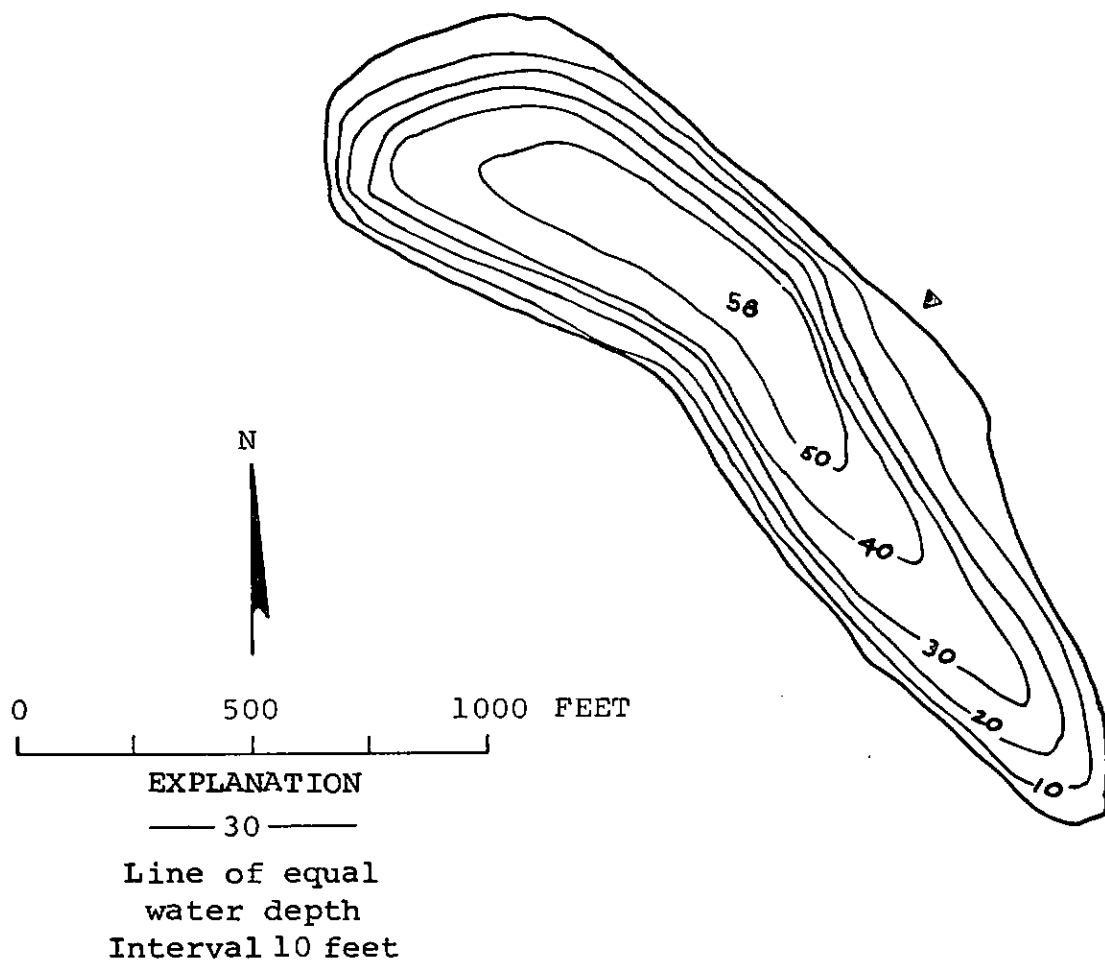
LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 5/74  
 TIME 1230  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 3  
 FECAL COLIFORM, MEAN (COL./100ML) 2

## REMARKS

-----  
 EMERSED PLANTS COVERED MOST OF THE SHORELINE. THE WATER IS A BROWN COLOR.  
 THE LITTORAL BOTTOM IS MOSTLY MUCK.





Tarboo Lake, Jefferson County. From Washington Department of Game, March 19, 1952.



Tarboo Lake, Jefferson County. July 13, 1974. Approx. scale 1:4800.



SAN JUAN  
COUNTY



## BRIGGS LAKE

## SAN JUAN COUNTY

LATITUDE 48°35'28" LONGITUDE 123° 7'29" T36N-R3W-30  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.71 SQ MI  
 ALTITUDE 231. FT  
 LAKE AREA 28. ACRES  
 LAKE VOLUME 210. ACRE-FT  
 MEAN DEPTH 8. FT  
 MAXIMUM DEPTH 10. FT  
 SHORELINE LENGTH 1.4 MI  
 SHORELINE CONFIGURATION 1.9  
 DEVELOPMENT OF VOLUME 0.75  
 BOTTOM SLOPE 0.81 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 1 %  
 FOREST OR UNPRODUCTIVE 93 %  
 LAKE SURFACE 6 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/ 8/74  
 TIME 1200 1205  
 DEPTH (FT) 3. 7.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.01 0.00  
 TOTAL AMMONIA (N) 0.12 0.10  
 TOTAL ORGANIC NITROGEN (N) 0.78 0.81  
 TOTAL PHOSPHORUS (P) 0.018 0.017  
 TOTAL ORTHOPHOSPHATE (P) 0.005 0.002  
 SPECIFIC CONDUCTANCE (MICROMHOS) 220 220  
 WATER TEMPERATURE (DEG C) 22.3 22.1  
 COLOR (PLATINUM-COBALT UNITS) 15 20  
 SECCHI-DISC VISIBILITY (FT) 8  
 DISSOLVED OXYGEN 7.8 7.8

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 26- 50 %

## DATE

8/ 8/74

## TIME

1215

## NUMBER OF FECAL COLIFORM SAMPLES

2

## FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

## FECAL COLIFORM, MAXIMUM (COL./100ML)

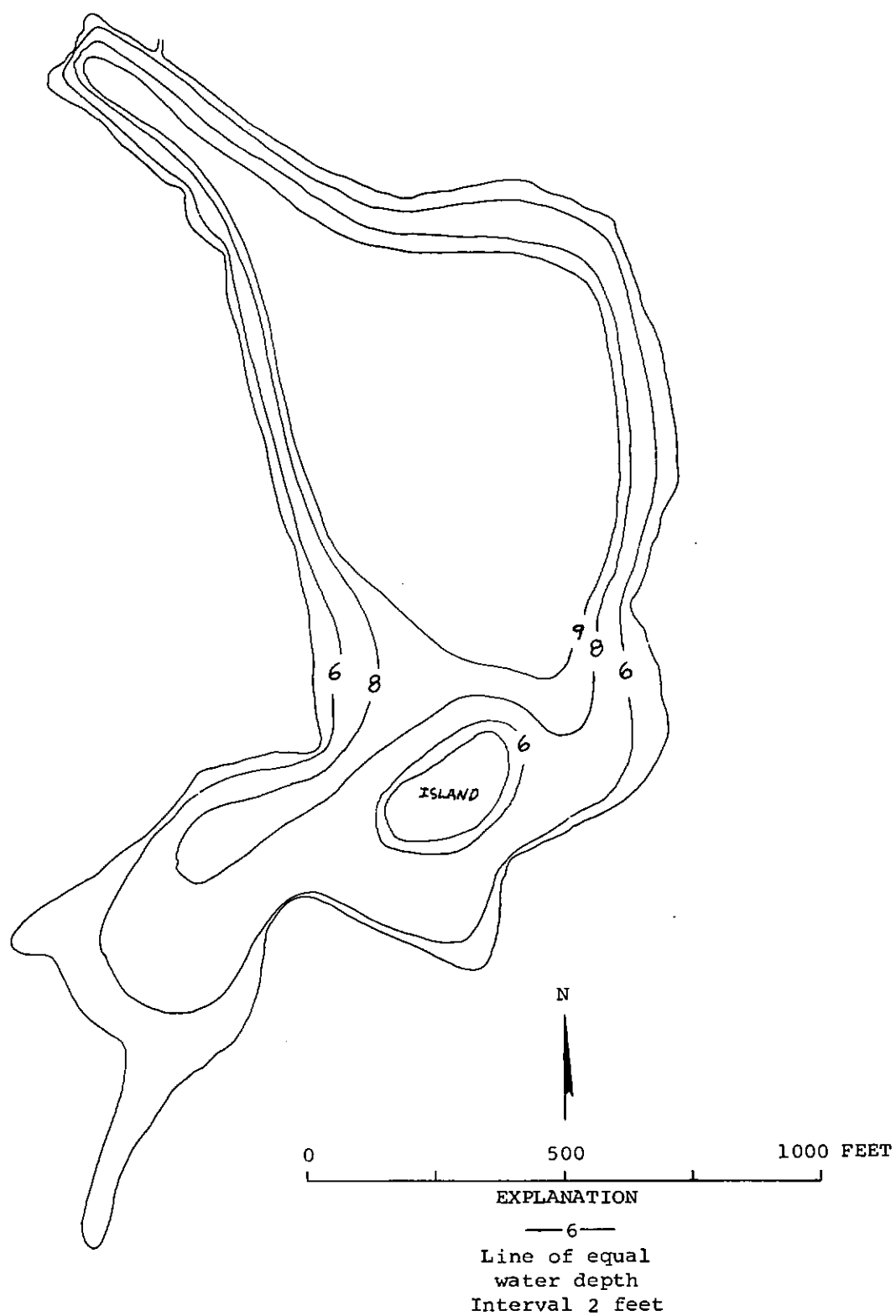
&lt;1

## FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

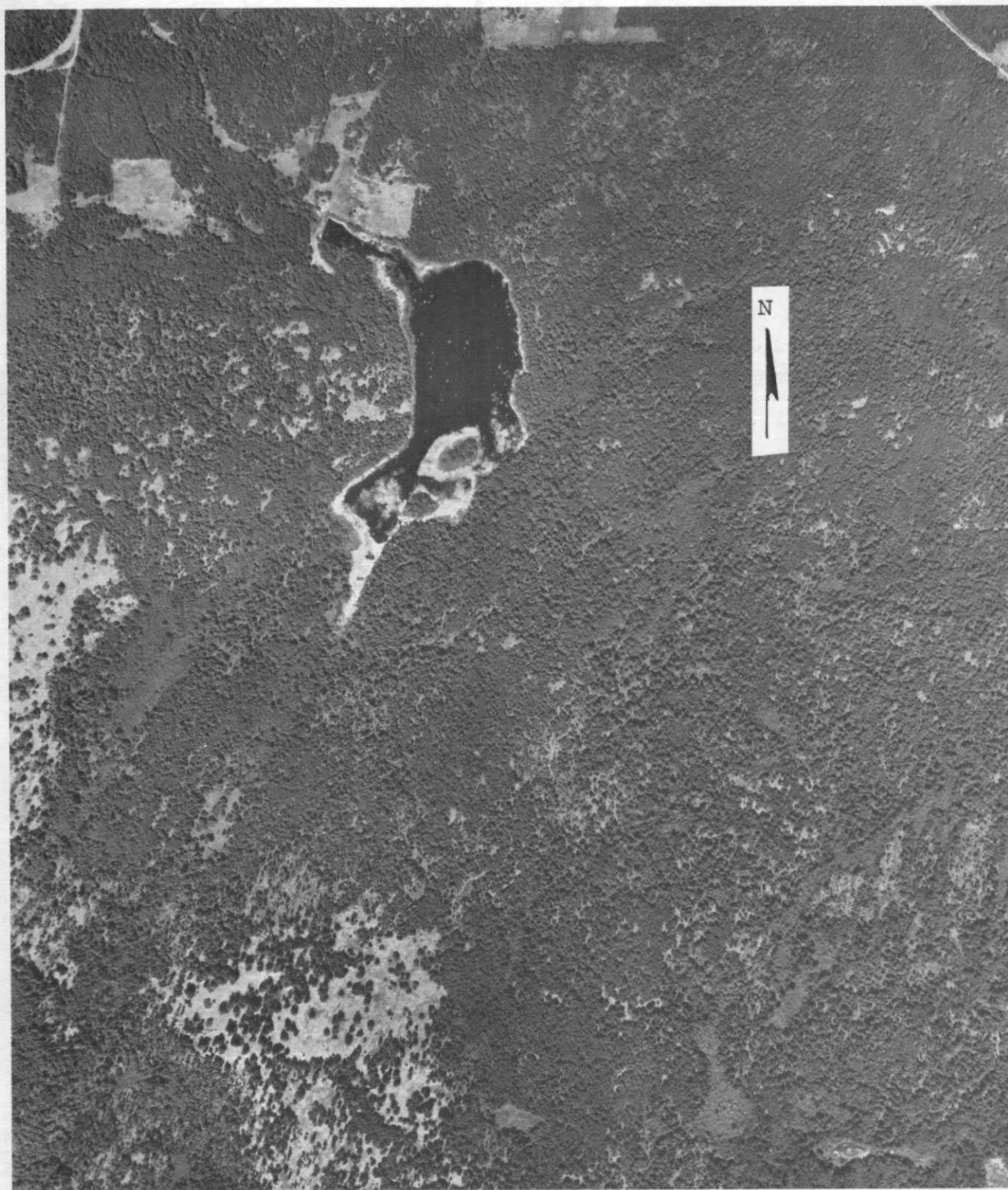
## REMARKS

-----  
 THE LAKE HAD A HEAVY GROWTH OF EMERSED AND SUBMERSED MACROPHYTES. MANY  
 LOGS AND SNAGS ARE IN THE LAKE.



Briggs Lake, San Juan County. From National Park Service, March 14, 1923.





Briggs Lake, San Juan County. June 16, 1969. Approx. scale 1:12,000.

## CASCADE LAKE

SAN JUAN COUNTY

LATITUDE 48°38'50" LONGITUDE 122°50'45" T37N-R1W-32  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 3.42 SQ MI  
 ALTITUDE 346. FT  
 LAKE AREA 170. ACRES  
 LAKE VOLUME 4600. ACRE-FT  
 MEAN DEPTH 27. FT  
 MAXIMUM DEPTH 70. FT  
 SHORELINE LENGTH 3.2 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.39  
 BOTTOM SLOPE 2.3 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 2 %  
 NUMBER OF NEARSHORE HOMES 2  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN <1 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 92 %  
 LAKE SURFACE 8 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

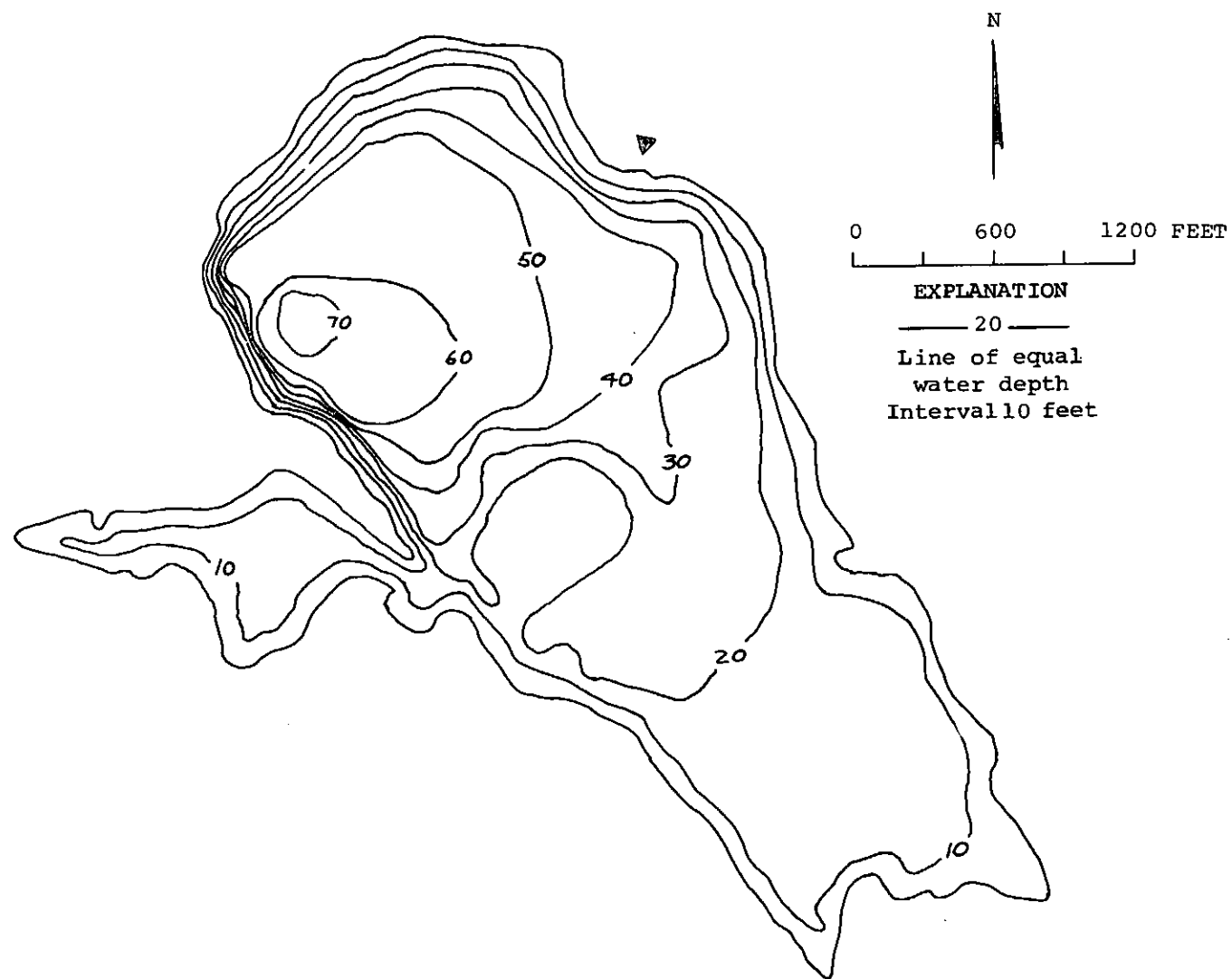
-----  
 DATE 8/ 7/74  
 TIME 1635 1640  
 DEPTH (FT) 3. 23.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.03 0.03  
 TOTAL ORGANIC NITROGEN (N) 0.33 0.32  
 TOTAL PHOSPHORUS (P) 0.006 0.005  
 TOTAL ORTHOPHOSPHATE (P) 0.001 0.001  
 SPECIFIC CONDUCTANCE (MICROMHOS) 180 180  
 WATER TEMPERATURE (DEG C) 22.0 22.0  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 20  
 DISSOLVED OXYGEN 9.4 9.5

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 7/74  
 TIME 1650  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 THE LAKE IS LOCATED IN MORAN STATE PARK. THE LAKE IS USED FOR HYDROELECTRIC POWER AT ROSARIO WITH A STABILIZING DAM AT OUTLET. THE DO WAS NEAR SATURATION THROUGHOUT THE WATER COLUMN.



Cascade Lake, San Juan County. From U.S. Geological Survey, March 21, 1974.



Cascade Lake, San Juan County. July 21, 1969. Approx. scale 1:12,000.

## HORSESHOE LAKE

## SAN JUAN COUNTY

LATITUDE 48°33'49" LONGITUDE 122°49' 3" T36N-R1W-33  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.64 SQ MI  
 ALTITUDE 354. FT  
 LAKE AREA 140. ACRES  
 LAKE VOLUME 6900. ACRE-FT  
 MEAN DEPTH 50. FT  
 MAXIMUM DEPTH 96. FT  
 SHORELINE LENGTH 3.3 MI  
 SHORELINE CONFIGURATION 2.0  
 DEVELOPMENT OF VOLUME 0.52  
 BOTTOM SLOPE 3.5 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 66 %  
 LAKE SURFACE 34 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

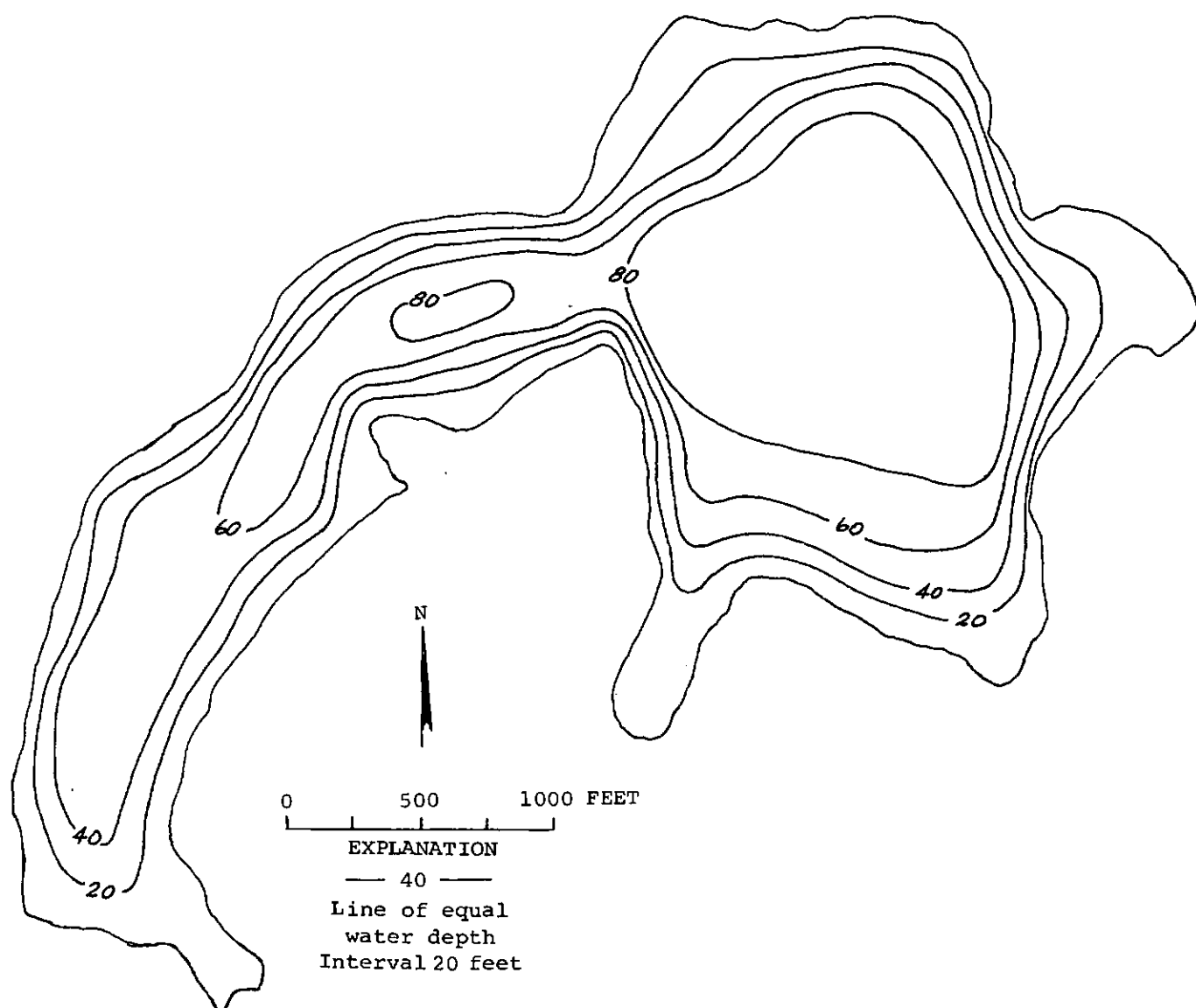
-----  
 DATE 8/ 8/74  
 TIME 1310 1315  
 DEPTH (FT) 3. 85.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.01  
 TOTAL AMMONIA (N) 0.05 0.17  
 TOTAL ORGANIC NITROGEN (N) 0.54 0.46  
 TOTAL PHOSPHORUS (P) 0.008 0.049  
 TOTAL ORTHOPHOSPHATE (P) 0.004 0.038  
 SPECIFIC CONDUCTANCE (MICROMHOS) 190 200  
 WATER TEMPERATURE (DEG C) 22.9 4.9  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 21  
 DISSOLVED OXYGEN 9.0 0.9

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 8/74  
 TIME 1320  
 NUMBER OF FECAL COLIFORM SAMPLES 4  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

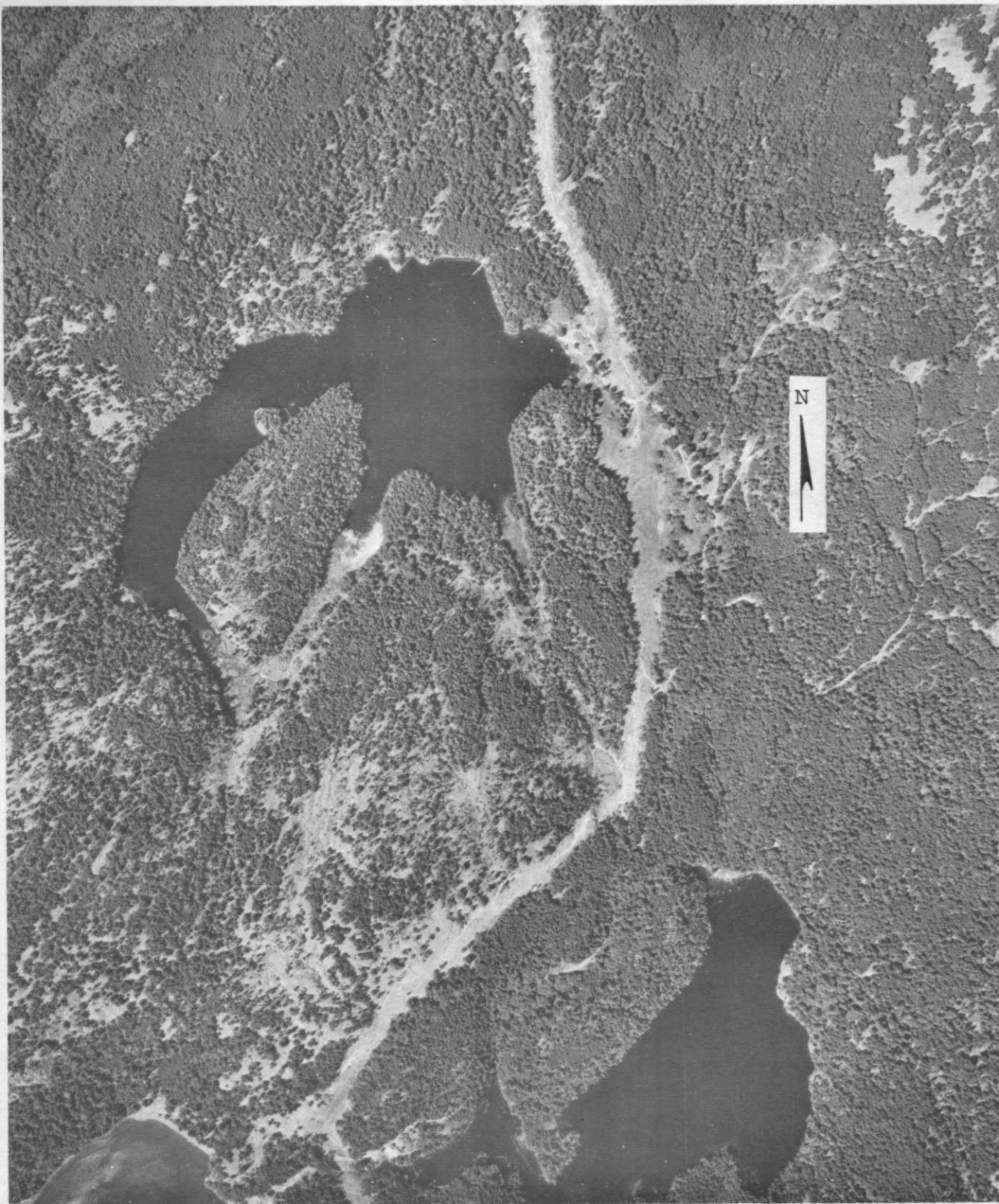
## REMARKS

-----  
 SUBMERSED AND EMERSED PLANTS COVERED MOST OF THE LAKESHORE IN A NARROW  
 BAND. LOGS WERE SCATTERED ALONG THE SHORE.



Horseshoe Lake, San Juan County. From U.S. Geological Survey, May 20, 1974.





Horseshoe Lake, San Juan County. July 21, 1969. Approx. scale 1:12,000.



## HUMMEL LAKE

## SAN JUAN COUNTY

LATITUDE 48°31' 5" LONGITUDE 122°53'16" T35N-R2W-23  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.84 SQ MI  
ALTITUDE 97. FT  
LAKE AREA 36. ACRES  
LAKE VOLUME 270. ACRE-FT  
MEAN DEPTH 8. FT  
MAXIMUM DEPTH 12. FT  
SHORELINE LENGTH 0.97 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.63  
BOTTOM SLOPE 0.85 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 4 %  
NUMBER OF NEARSHORE HOMES 1  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 30 %  
FOREST OR UNPRODUCTIVE 63 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

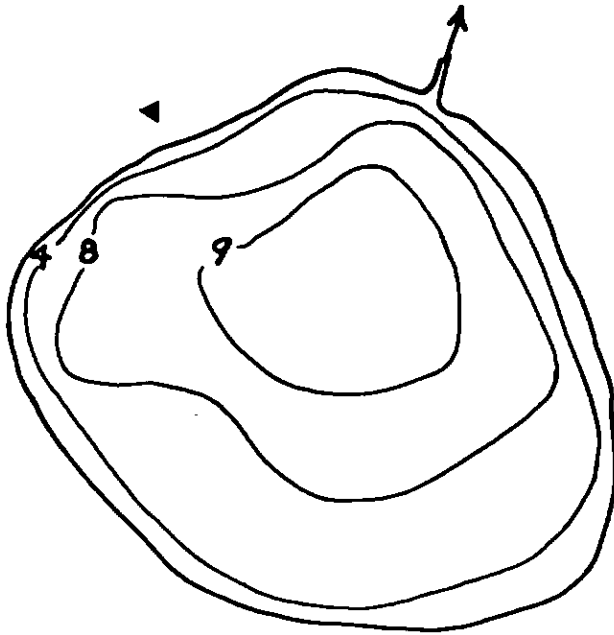
-----  
DATE 8/ 8/74  
TIME 1600 1605  
DEPTH (FT) 3. 7.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.01 0.01  
TOTAL AMMONIA (N) 0.53 0.67  
TOTAL ORGANIC NITROGEN (N) 3.3 1.3  
TOTAL PHOSPHORUS (P) 0.15 0.24  
TOTAL ORTHOPHOSPHATE (P) 0.057 0.16  
SPECIFIC CONDUCTANCE (MICROMHOS) 140 130  
WATER TEMPERATURE (DEG C) 22.3 20.7  
COLOR (PLATINUM-COBALT UNITS) 120 90  
SECCHI-DISC VISIBILITY (FT) 2  
DISSOLVED OXYGEN 14.6 2.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 8/74  
TIME 1610  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) 4  
FECAL COLIFORM, MAXIMUM (COL./100ML) 4  
FECAL COLIFORM, MEAN (COL./100ML) 4

## REMARKS

-----  
AN ALGAL BLOOM WAS OBSERVED. A THICK PATCH OF EMERSED AQUATICS WAS ON THE SOUTH END OF THE LAKE. THE LITTORAL BOTTOM IS MOSTLY MUCK.



N

0 500 1000 FEET

EXPLANATION

— 8 —

Line of equal  
water depth  
Interval 4' feet

Hummel Lake, San Juan County. From Washington Department of Game, May 19, 1948.



Hummel Lake, San Juan County. July 20, 1974. Approx. scale 1:4800.

## MARTINS LAKE

## SAN JUAN COUNTY

LATITUDE 48°37'20" LONGITUDE 122°53'22" T36N-R2W-12  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.31 SQ MI  
 ALTITUDE 500. FT  
 LAKE AREA 27. ACRES  
 LAKE VOLUME 200. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 17. FT  
 SHORELINE LENGTH 1.3 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.43  
 BOTTOM SLOPE 1.4 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 18 %  
 FOREST OR UNPRODUCTIVE 68 %  
 LAKE SURFACE 14 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/ 8/74  
 TIME 1420 1425  
 DEPTH (FT) 3. 13.  
 TOTAL NITRATE (N) 0.01 0.00  
 TOTAL NITRITE (N) 0.00 0.01  
 TOTAL AMMONIA (N) 0.06 0.11  
 TOTAL ORGANIC NITROGEN (N) 0.73 0.87  
 TOTAL PHOSPHORUS (P) 0.025 0.050  
 TOTAL ORTHOPHOSPHATE (P) 0.004 0.011  
 SPECIFIC CONDUCTANCE (MICROMHOS) 140 150  
 WATER TEMPERATURE (DEG C) 22.1 18.2  
 COLOR (PLATINUM-COBALT UNITS) 5 20  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 9.0 1.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 51- 75 %

## DATE

8/ 8/74

## TIME

1435

## NUMBER OF FECAL COLIFORM SAMPLES

3

## FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

## FECAL COLIFORM, MAXIMUM (COL./100ML)

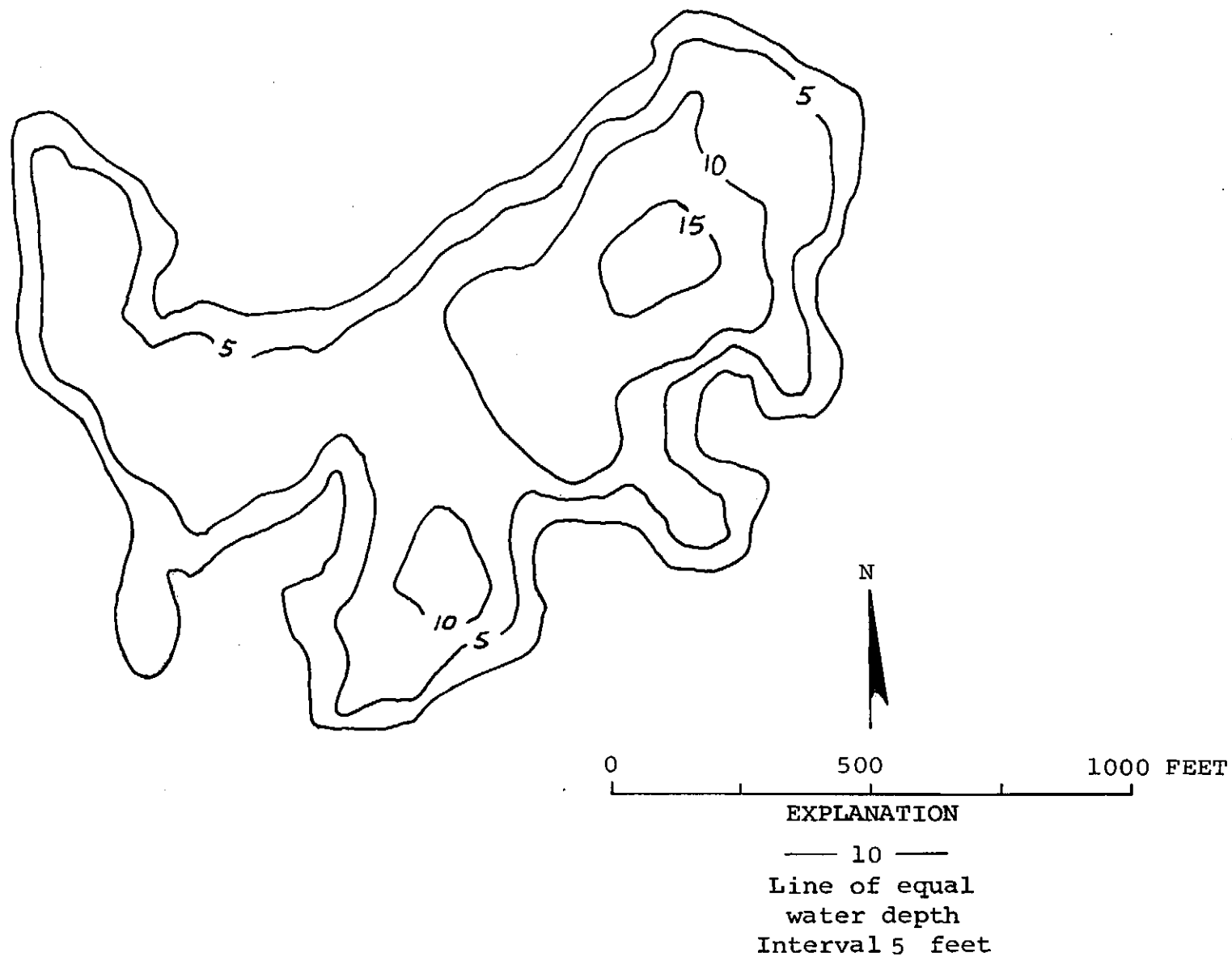
2

## FECAL COLIFORM, MEAN (COL./100ML)

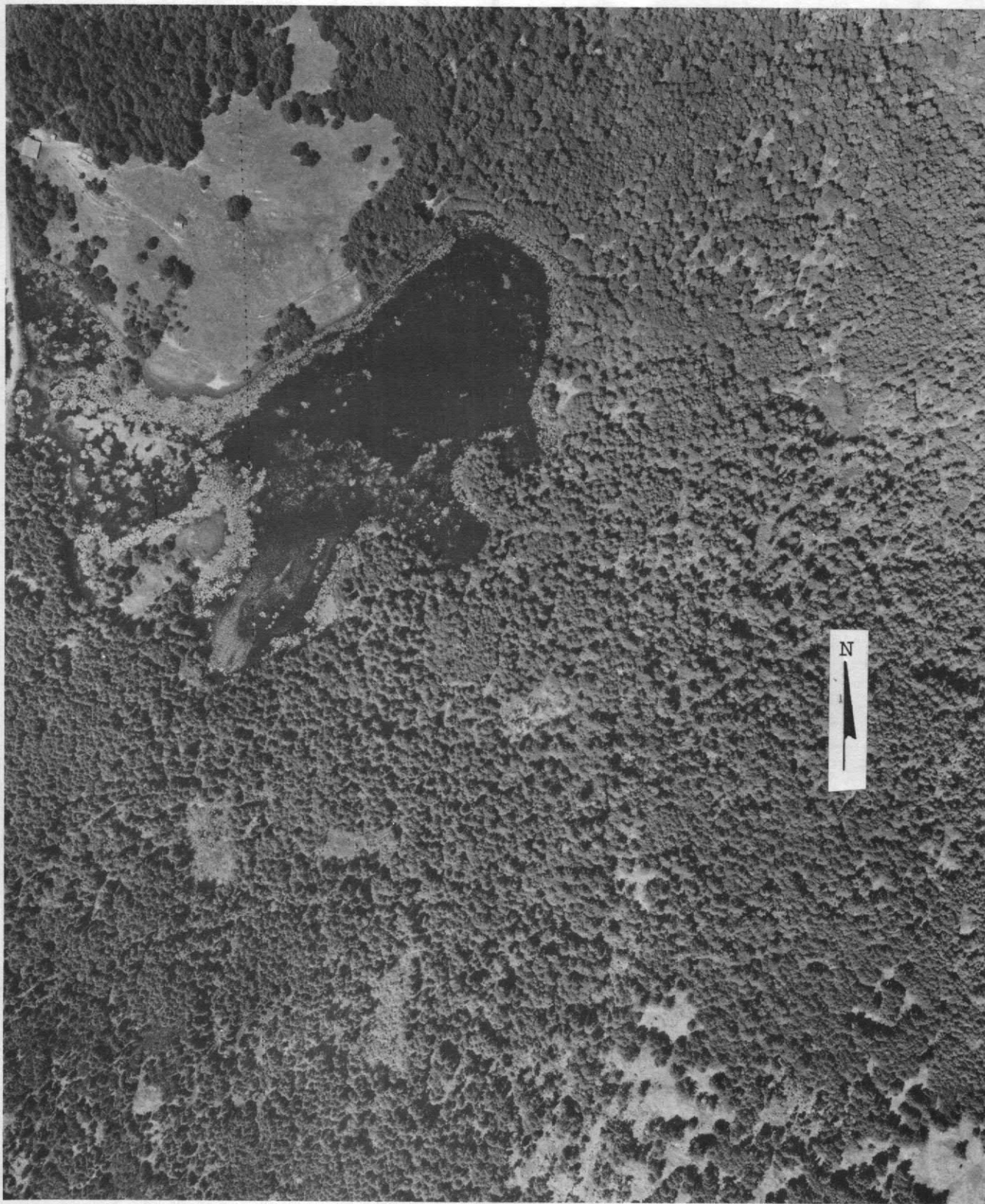
1

## REMARKS

-----  
 A LARGE PERCENTAGE OF THE SHORELINE AND LAKE SURFACE WAS COVERED BY  
 EMERSED MACROPHYTES. THE LITTORAL BOTTOM IS MOSTLY SILT/MUCK.



Martins Lake, San Juan County. From U.S. Geological Survey, March 29, 1974.



Martins Lake, San Juan County. July 20, 1974. Approx. scale 1:4800.

## MOUNTAIN LAKE

## SAN JUAN COUNTY

LATITUDE 48°39' 1" LONGITUDE 122°48'39" T37N-R1W-34  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 2.27 SQ MI  
 ALTITUDE 914. FT  
 LAKE AREA 180. ACRES  
 LAKE VOLUME 8800. ACRE-FT  
 MEAN DEPTH 49. FT  
 MAXIMUM DEPTH 140. FT  
 SHORELINE LENGTH 4.2 MI  
 SHORELINE CONFIGURATION 2.3  
 DEVELOPMENT OF VOLUME 0.36  
 BOTTOM SLOPE 4.4 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 1 %  
 NUMBER OF NEARSHORE HOMES 1  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 88 %  
 LAKE SURFACE 12 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/ 8/74  
 TIME 1540 1545  
 DEPTH (FT) 3. 82.  
 TOTAL NITRATE (N) 0.01 0.09  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.03 0.05  
 TOTAL ORGANIC NITROGEN (N) 0.20 0.10  
 TOTAL PHOSPHORUS (P) 0.008 0.064  
 TOTAL ORTHOPHOSPHATE (P) 0.002 0.001  
 SPECIFIC CONDUCTANCE (MICROMHOS) 105 110  
 WATER TEMPERATURE (DEG C) 21.2 6.2  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 23  
 DISSOLVED OXYGEN 8.8 8.8

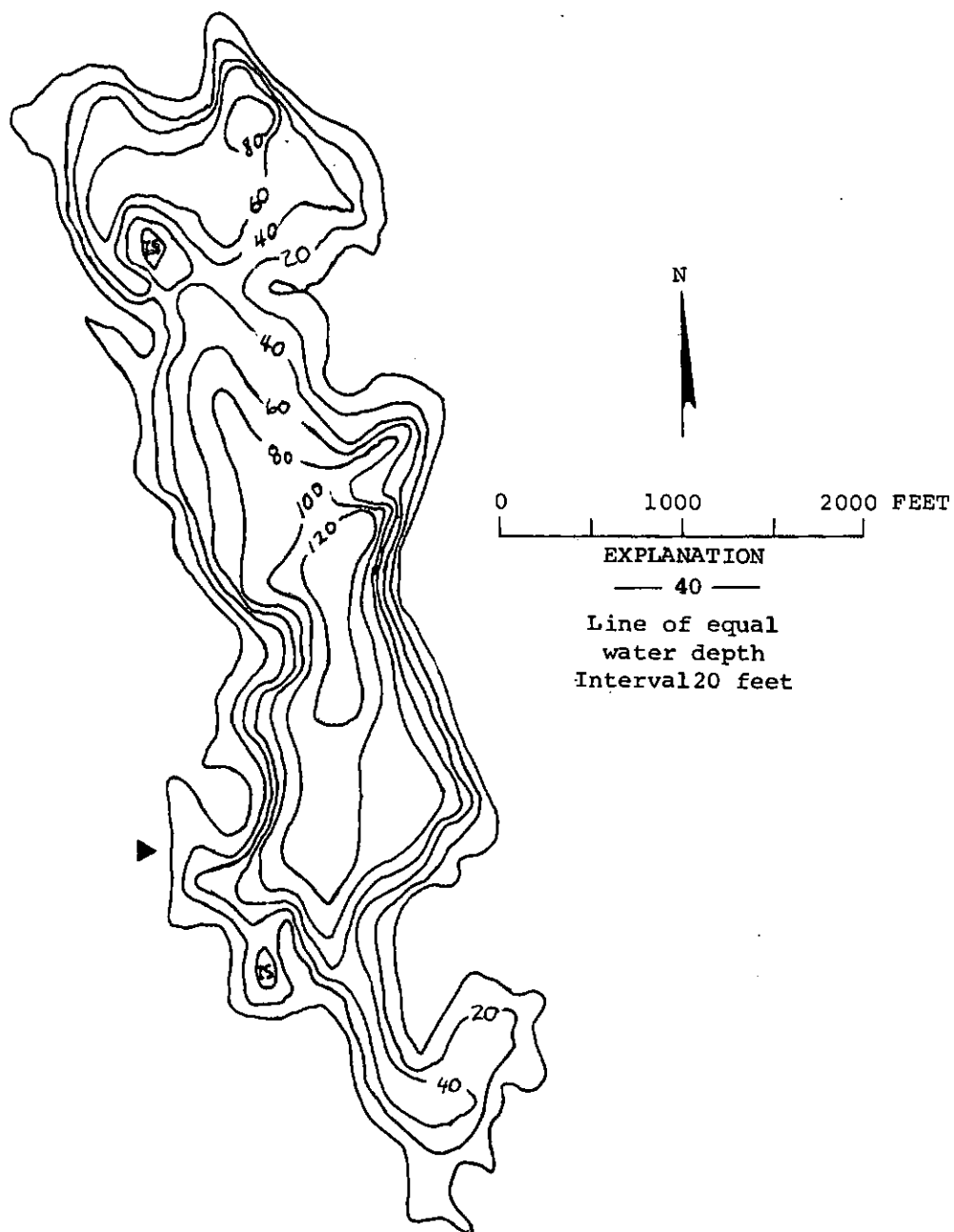
LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 8/74  
 TIME 1550  
 NUMBER OF FECAL COLIFORM SAMPLES 4  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE IS LOCATED IN MORAN STATE PARK AND SERVES AS A WATER SUPPLY  
 FOR THE COMMUNITIES OF DOE BAY AND OLGA. VERY FEW EMERSED OR SUBMERSED  
 PLANTS WERE NOTED.





Mountain Lake, San Juan County. From U.S. Geological Survey, March 20, 1974.



Mountain Lake, San Juan County. July 21, 1969. Approx. scale 1:12,000.

## SPENCER LAKE

## SAN JUAN COUNTY

LATITUDE 48°33' 9" LONGITUDE 122°48'25" T35N-R1W-4  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 2.42 SQ MI  
 ALTITUDE 200. FT  
 LAKE AREA 130. ACRES  
 LAKE VOLUME 5400. ACRE-FT  
 MEAN DEPTH 42. FT  
 MAXIMUM DEPTH 83. FT  
 SHORELINE LENGTH 2.8 MI  
 SHORELINE CONFIGURATION 1.8  
 DEVELOPMENT OF VOLUME 0.50  
 BOTTOM SLOPE 3.1 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 92 %  
 LAKE SURFACE 8 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

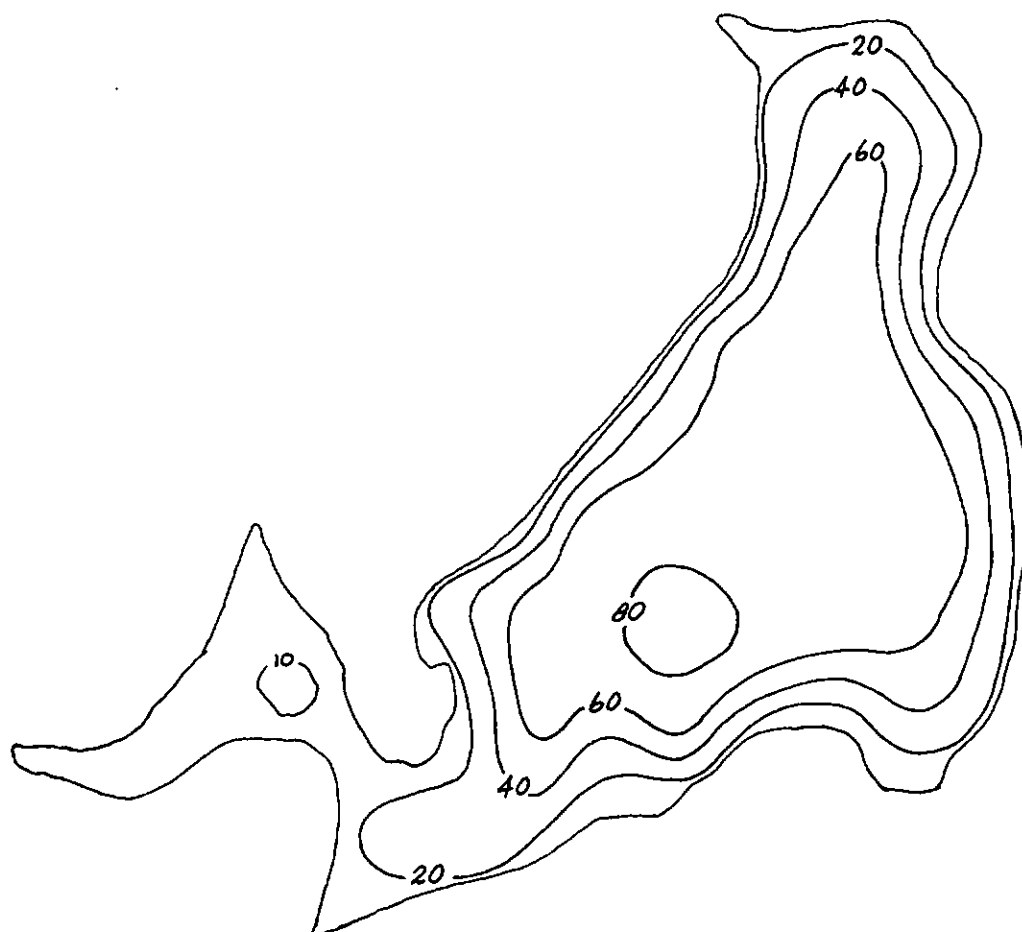
-----  
 DATE 8/ 8/74  
 TIME 1155 1200  
 DEPTH (FT) 3. 72.  
 TOTAL NITRATE (N) 0.01 0.06  
 TOTAL NITRITE (N) 0.00 0.01  
 TOTAL AMMONIA (N) 0.05 0.32  
 TOTAL ORGANIC NITROGEN (N) 0.31 0.60  
 TOTAL PHOSPHORUS (P) 0.041 0.23  
 TOTAL ORTHOPHOSPHATE (P) 0.003 0.15  
 SPECIFIC CONDUCTANCE (MICROMHOS) 200 --  
 WATER TEMPERATURE (DEG C) 21.7 4.8  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 25  
 DISSOLVED OXYGEN 8.8 1.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/ 8/74  
 TIME 1210  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE HAD A LIGHT GROWTH OF EMERSED PLANTS IN THE SOUTHWEST BAY.



N

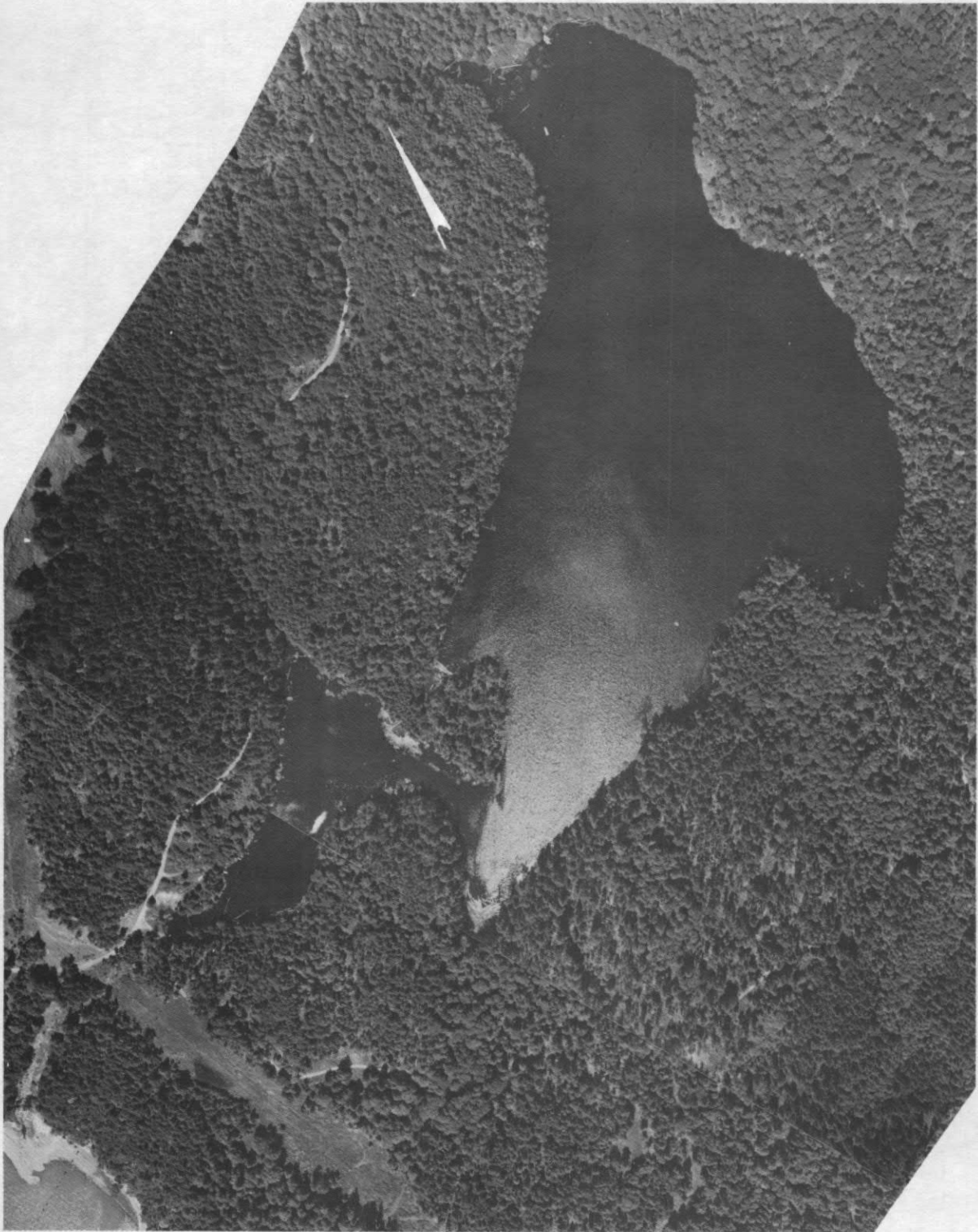
0 500 1000 FEET

EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 10 feet

Spencer Lake, San Juan County. From U.S. Geological Survey, May 20, 1974.



Spencer Lake, San Juan County. July 20, 1974. Approx. scale 1:4800.

## SPORTSMAN LAKE

## SAN JUAN COUNTY

LATITUDE 48°33'59" LONGITUDE 123° 4' 4" T36N-R3W-33  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 3.16 SQ MI  
ALTITUDE 153. FT  
LAKE AREA 65. ACRES  
LAKE VOLUME 400. ACRE-FT  
MEAN DEPTH 6. FT  
MAXIMUM DEPTH 9. FT  
SHORELINE LENGTH 1.3 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.68  
BOTTOM SLOPE 0.48 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 14 %  
FOREST OR UNPRODUCTIVE 82 %  
LAKE SURFACE 4 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/ 8/74  
TIME 1500 1505  
DEPTH (FT) 2. 5.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.01 0.01  
TOTAL AMMONIA (N) 0.11 0.19  
TOTAL ORGANIC NITROGEN (N) 0.99 1.2  
TOTAL PHOSPHORUS (P) 0.034 0.079  
TOTAL ORTHOPHOSPHATE (P) 0.005 0.030  
SPECIFIC CONDUCTANCE (MICROMHOS) 180 180  
WATER TEMPERATURE (DEG C) 22.0 21.0  
COLOR (PLATINUM-COBALT UNITS) 35 45  
SECCHI-DISC VISIBILITY (FT) > 7  
DISSOLVED OXYGEN 8.0 8.0

LAKE SHORELINE COVERED BY EMERSED PLANTS 75-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 51- 75 %

DATE 8/ 8/74  
TIME 1515  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THE LAKE HAD A HEAVY GROWTH OF EMERSED AND SUBMERSED MACROPHYTES. THE  
DOMINANT AQUATIC PLANT (COONTAIL) WAS FOUND IN DENSE MATS. THE LITTORAL  
BOTTOM WAS MOSTLY MUCK.





Sportsman Lake, San Juan County. Bathymetric map from  
U.S. Geological Survey, March 18, 1974. Aerial photo, June 16, 1969.



## TROUT LAKE

## SAN JUAN COUNTY

LATITUDE 48°31'36" LONGITUDE 123° 7'17" T35N-R3W-18  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 1.39 SQ MI  
ALTITUDE 253. FT  
LAKE AREA 63. ACRES  
LAKE VOLUME 1400. ACRE-FT  
MEAN DEPTH 23. FT  
MAXIMUM DEPTH 49. FT  
SHORELINE LENGTH 2.6 MI  
SHORELINE CONFIGURATION 2.3  
DEVELOPMENT OF VOLUME 0.47  
BOTTOM SLOPE 2.6 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 93 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

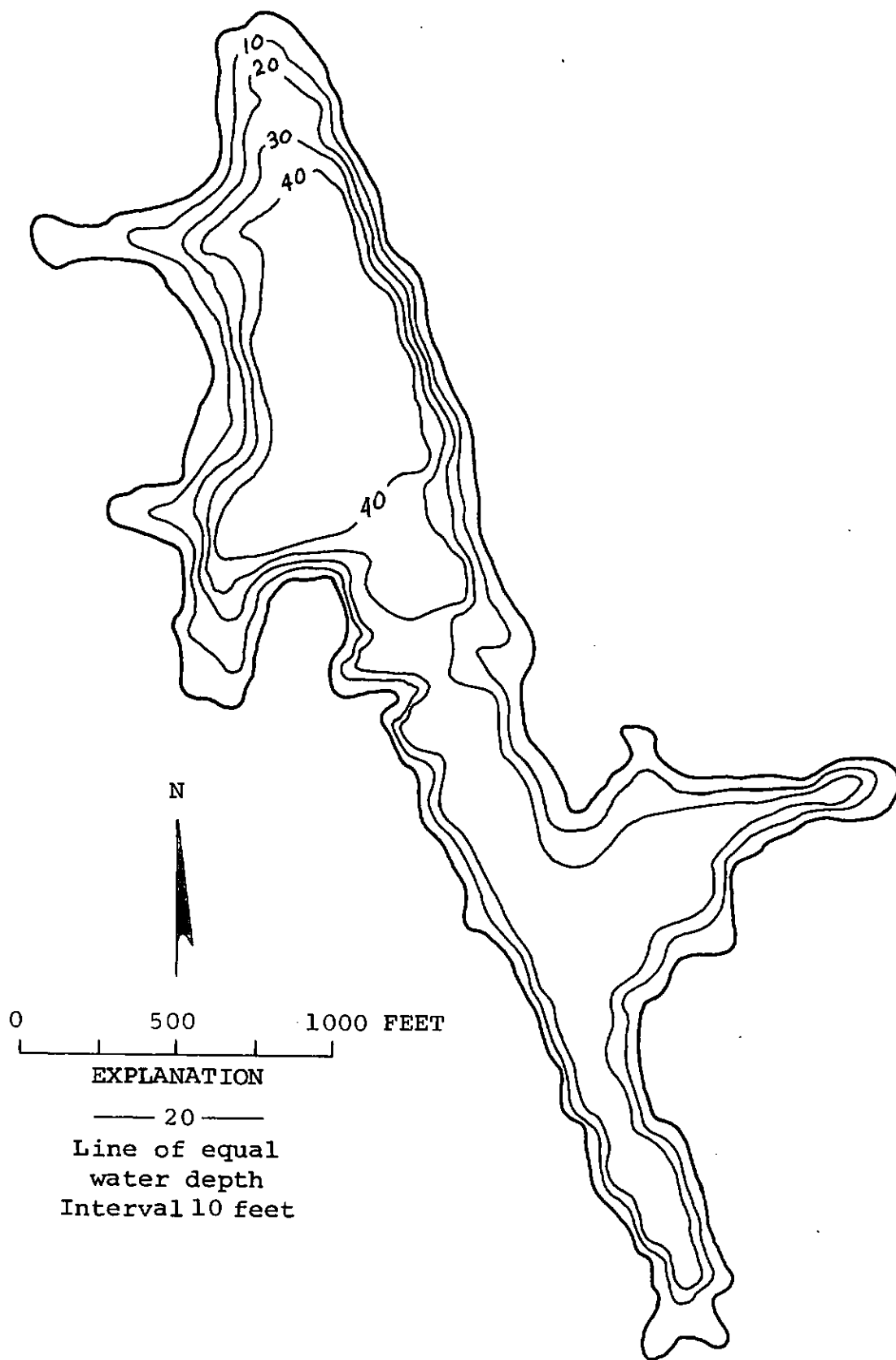
-----  
SAMPLE SITE 1  
DATE 8/ 8/74  
TIME 1300 1305  
DEPTH (FT) 3. 36.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.14  
TOTAL ORGANIC NITROGEN (N) 0.38 0.33  
TOTAL PHOSPHORUS (P) 0.006 0.019  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.008  
SPECIFIC CONDUCTANCE (MICROMHOS) 200 200  
WATER TEMPERATURE (DEG C) 22.5 7.5  
COLOR (PLATINUM-COBALT UNITS) 15 25  
SECCHI-DISC VISIBILITY (FT) 18  
DISSOLVED OXYGEN 8.8 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/ 8/74  
TIME 1315  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THE LAKE SERVES AS A WATER SUPPLY FOR THE TOWN OF FRIDAY HARBOR ON THE SAN JUAN ISLANDS. EMERSED PLANTS COVERED THE SHORELINE IN A THIN MARGIN AROUND THE SHORE. THE LAKE HAS NUMEROUS SNAGS AND LOGS.



Trout Lake, San Juan County. From U.S. Geological Survey, March 19, 1974.



Trout Lake, San Juan County. June 16, 1969. Approx. scale 1:12,000.

## ZYLSTRA LAKE

## SAN JUAN COUNTY

LATITUDE 48°31' 8" LONGITUDE 123° 5' 3" T35N-R3W-20  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 8.62 SQ MI  
 ALTITUDE 140. FT  
 LAKE AREA 48. ACRES  
 LAKE VOLUME 350. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 16. FT  
 SHORELINE LENGTH 1.5 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.46  
 BOTTOM SLOPE 0.99 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 7 %  
 NUMBER OF NEARSHORE HOMES 1  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 25 %  
 FOREST OR UNPRODUCTIVE 73 %  
 LAKE SURFACE 2 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

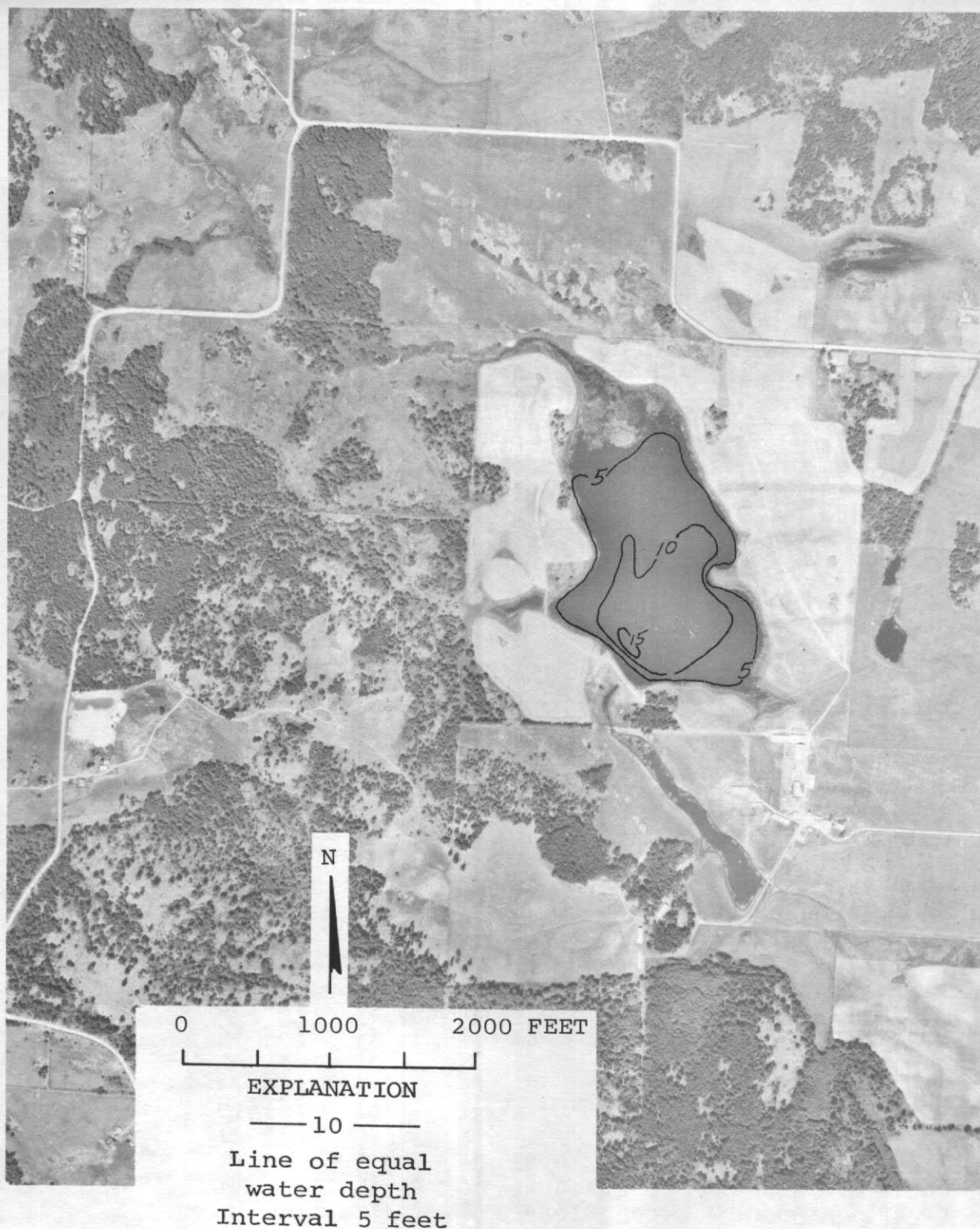
-----  
 DATE 8/ 8/74  
 TIME 1400 1405  
 DEPTH (FT) 3. 7.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.01 0.01  
 TOTAL AMMONIA (N) 0.16 0.20  
 TOTAL ORGANIC NITROGEN (N) 1.4 1.4  
 TOTAL PHOSPHORUS (P) 0.11 0.10  
 TOTAL ORTHOPHOSPHATE (P) 0.025 0.029  
 SPECIFIC CONDUCTANCE (MICROMHOS) 230 230  
 WATER TEMPERATURE (DEG C) 21.5 21.0  
 COLOR (PLATINUM-COBALT UNITS) 40 40  
 SECCHI-DISC VISIBILITY (FT) 5  
 DISSOLVED OXYGEN 13.2 10.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 26- 50 %

DATE 8/ 8/74  
 TIME 1415  
 NUMBER OF FECAL COLIFORM SAMPLES 1  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE HAD DENSE BEDS OF SUBMERSED PLANTS (WATER MILFOIL) WHICH COVERED THE LAKE BOTTOM. THE LITTORAL BOTTOM IS MUCK. AN ALGAL BLOOM WAS OBSERVED.



Zylstra Lake, San Juan County. Bathymetric map from  
U.S. Geological Survey, March 18, 1974. Aerial photo, June 16, 1969.

SKAGIT  
COUNTY





## BEAVER LAKE

## SKAGIT COUNTY

LATITUDE 48°26'45" LONGITUDE 122°13'10" T34N-R5E-7  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 2.28 SQ MI  
ALTITUDE 30. FT  
LAKE AREA 74. ACRES  
LAKE VOLUME 400. ACRE-FT  
MEAN DEPTH 5. FT  
MAXIMUM DEPTH 10. FT  
SHORELINE LENGTH 1.5 MI  
SHORELINE CONFIGURATION 1.3  
DEVELOPMENT OF VOLUME 0.54  
BOTTOM SLOPE 0.49 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 10 %  
FOREST OR UNPRODUCTIVE 85 %  
LAKE SURFACE 5 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

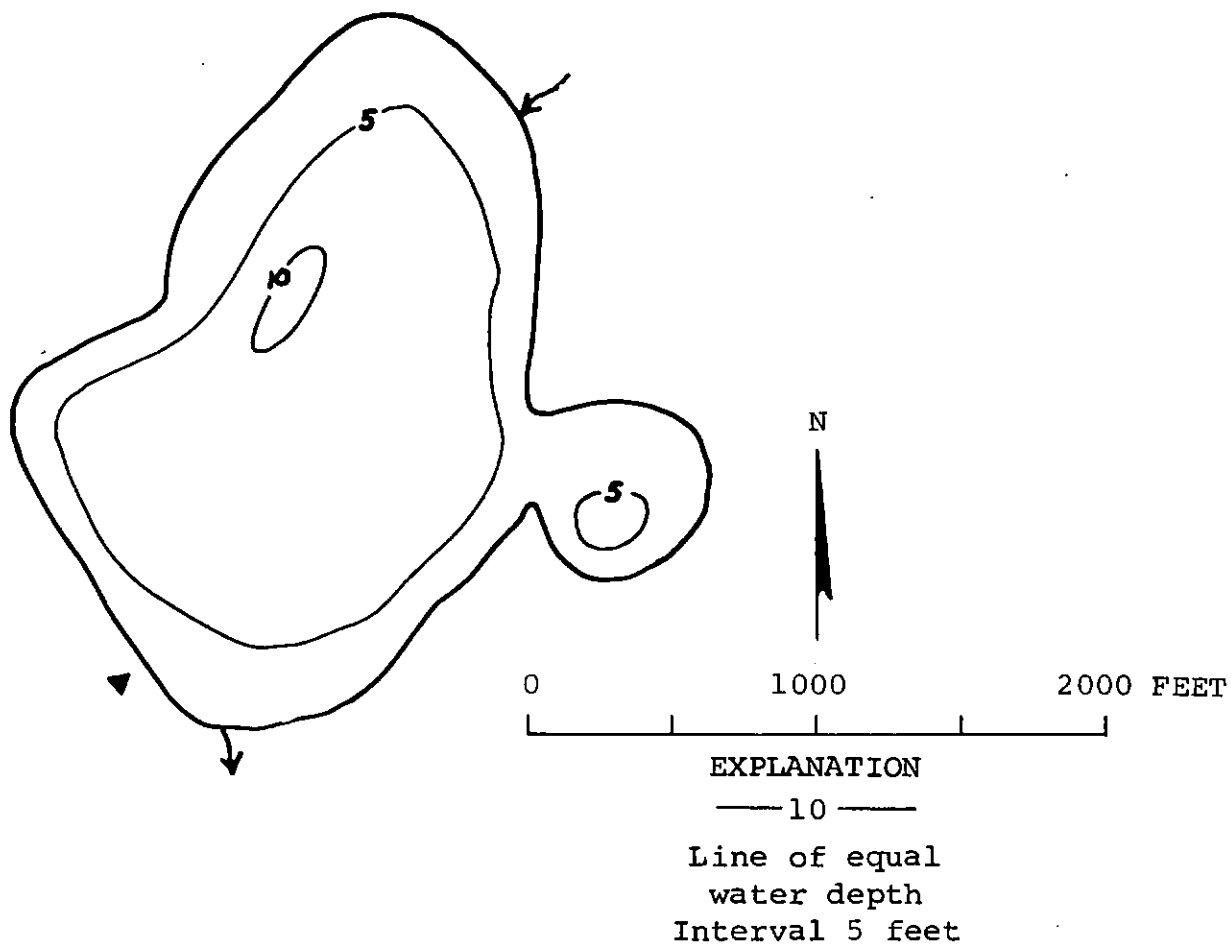
-----  
SAMPLE SITE 1  
DATE 7/10/74  
TIME 1530 1540  
DEPTH (FT) 3. 7.  
TOTAL NITRATE (N) 0.00 0.00  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.05  
TOTAL ORGANIC NITROGEN (N) 0.42 0.38  
TOTAL PHOSPHORUS (P) 0.016 0.020  
DISSOLVED ORTHOPHOSPHATE (P) 0.002 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 92 92  
WATER TEMPERATURE (DEG C) 18.5 18.5  
COLOR (PLATINUM-COBALT UNITS) 30 30  
SECCHI-DISC VISIBILITY (FT) > 7  
DISSOLVED OXYGEN 9.7 9.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 7/10/74  
TIME 1550  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) 2  
FECAL COLIFORM, MAXIMUM (COL./100ML) 24  
FECAL COLIFORM, MEAN (COL./100ML) 13

## REMARKS

-----  
THE LAKE HAD A HEAVY GROWTH OF BOTH EMERSED AND SUBMERSED MACROPHYTES.  
THE LITTORAL BOTTOM IS MOSTLY MUCK. IN 1974 THE LAKE WAS SAMPLED FOUR  
TIMES BY THE U.S.GEOLOGICAL SURVEY. THE PLANT SURVEY WAS CONDUCTED ON  
AUGUST 14, 1974.



Beaver Lake, Skagit County. From Washington Department of Game, June 28, 1948.



Beaver Lake, Skagit County. July 20, 1974. Approx. scale 1:4800.

## BIG LAKE

## SKAGIT COUNTY

LATITUDE 48\*23\*52" LONGITUDE 122\*14\*24" T34N-R4E-36  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 22.4 SQ MI  
ALTITUDE 81. FT  
LAKE AREA 520. ACRES  
LAKE VOLUME 7500. ACRE-FT  
MEAN DEPTH 14. FT  
MAXIMUM DEPTH 23. FT  
SHORELINE LENGTH 6.2 MI  
SHORELINE CONFIGURATION 1.9  
DEVELOPMENT OF VOLUME 0.62  
BOTTOM SLOPE 0.43 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 65 %  
NUMBER OF NEARSHORE HOMES 179  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 2 %  
AGRICULTURAL 7 %  
FOREST OR UNPRODUCTIVE 86 %  
LAKE SURFACE 5 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

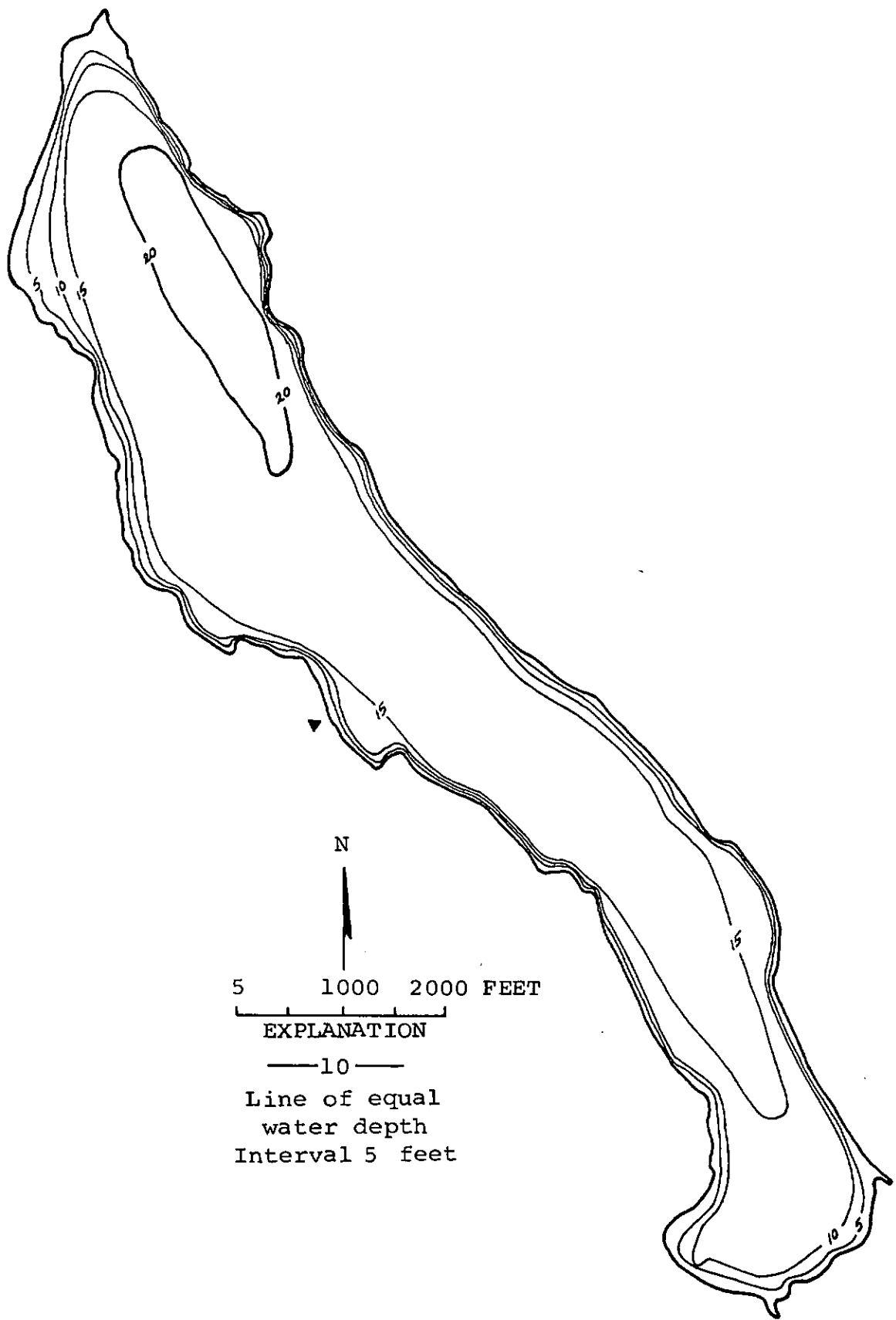
-----  
DATE 1  
8/20/73  
TIME 1740 1745  
DEPTH (FT) 3. 18.  
TOTAL NITRATE (N) 0.06 0.08  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.04 0.03  
TOTAL ORGANIC NITROGEN (N) 0.31 0.29  
TOTAL PHOSPHORUS (P) 0.016 0.016  
DISSOLVED ORTHOPHOSPHATE (P) 0.002 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 78 79  
WATER TEMPERATURE (DEG C) 20.2 19.1  
COLOR (PLATINUM-COBALT UNITS) 20 25  
SECCHI-DISC VISIBILITY (FT) 8  
DISSOLVED OXYGEN 9.2 9.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 7/10/74  
TIME 1045  
NUMBER OF FECAL COLIFORM SAMPLES 5  
FECAL COLIFORM, MINIMUM (COL./100ML) 1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 23  
FECAL COLIFORM, MEAN (COL./100ML) 8

## REMARKS

-----  
IN 1974 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S.GEOLOGICAL SURVEY. THE PLANT SURVEY WAS CONDUCTED ON AUGUST 14, 1974.



Big Lake, Skagit County. From U.S. Geological Survey, September 19, 1973.



Big Lake, Skagit County. June 2, 1970. Approx. scale 1:12,000.

## BLUFF LAKE

## SKAGIT COUNTY

LATITUDE 48°22'20" LONGITUDE 121°22'19" T33N-R11E-3  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.61 SQ MI  
ALTITUDE 4237. FT  
LAKE AREA 22. ACRES  
LAKE VOLUME 950. ACRE-FT  
MEAN DEPTH 43. FT  
MAXIMUM DEPTH 110. FT  
SHORELINE LENGTH 0.74 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.40  
BOTTOM SLOPE 9.7 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 94 %  
LAKE SURFACE 6 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/19/73  
TIME 1120 1125  
DEPTH (FT) 3. 75.  
TOTAL NITRATE (N) 0.00 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.55  
TOTAL ORGANIC NITROGEN (N) 0.06 0.23  
TOTAL PHOSPHORUS (P) 0.002 0.007  
TOTAL ORTHOPHOSPHATE (P) 0.001 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 8 37  
WATER TEMPERATURE (DEG C) 14.4 3.0  
COLOR (PLATINUM-COBALT UNITS) 5 45  
SECCHI-DISC VISIBILITY (FT) 36  
DISSOLVED OXYGEN 8.8 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS  
LAKE SURFACE COVERED BY EMERSED PLANTS

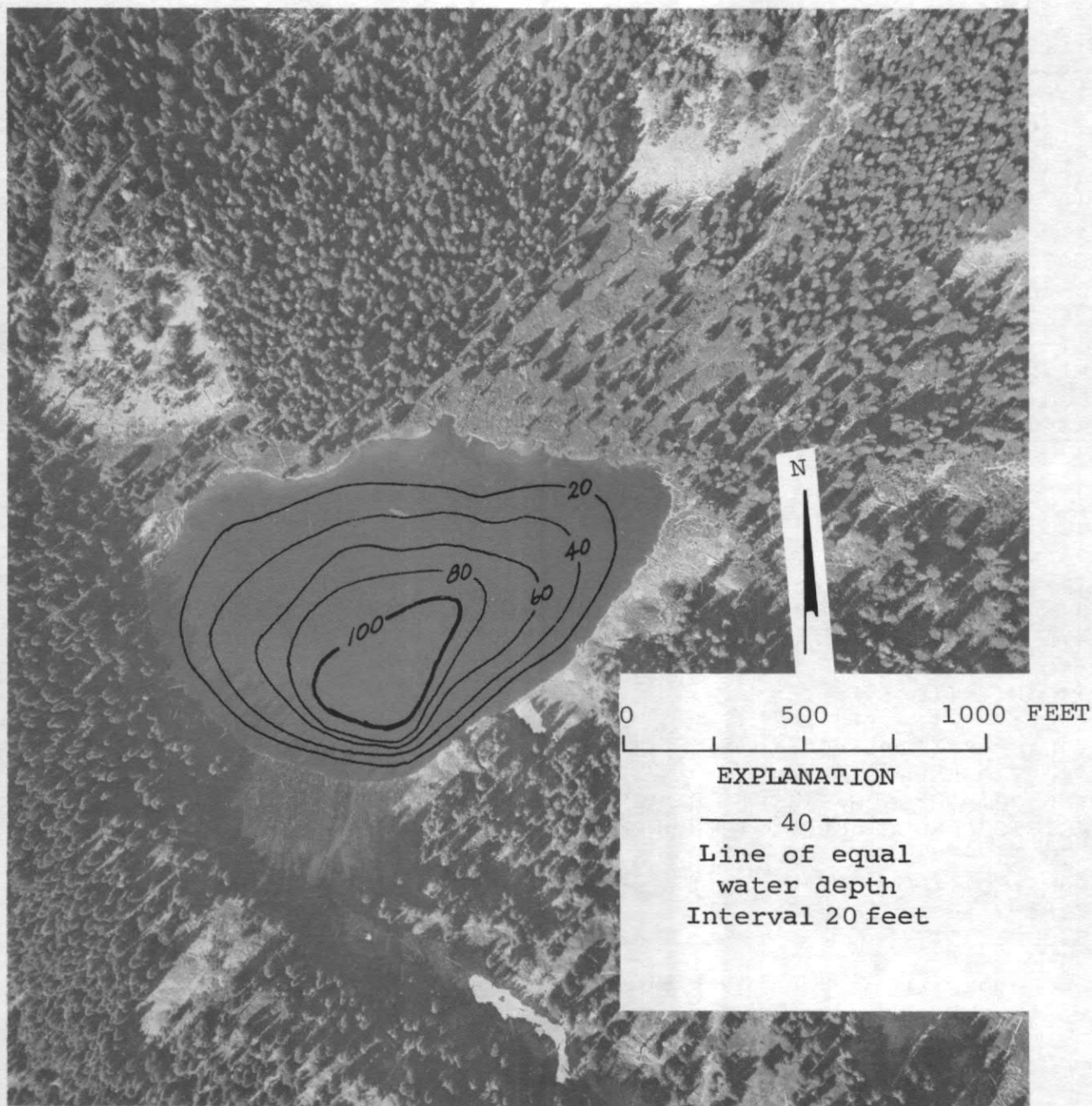
LITTLE OR NONE  
NONE OR <1 %

DATE 8/19/73  
TIME 1035  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW MACROPHYTES WERE OBSERVED. THE NEARSHORE WATER IS COVERED BY LOGS. HYDROGEN SULFIDE WAS DETECTED IN THE HYPOLIMNION.





Bluff Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 26, 1973.  
Aerial photo, August 2, 1973.

## CAMPBELL LAKE

## SKAGIT COUNTY

LATITUDE 48°26' 5" LONGITUDE 122°36'53" T34N-R1E-13  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 5.68 SQ MI  
 ALTITUDE 43. FT  
 LAKE AREA 370. ACRES  
 LAKE VOLUME 2800. ACRE-FT  
 MEAN DEPTH 8. FT  
 MAXIMUM DEPTH 16. FT  
 SHORELINE LENGTH 3.7 MI  
 SHORELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.47  
 BOTTOM SLOPE 0.36 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 21 %  
 NUMBER OF NEARSHORE HOMES 25  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 1 %  
 AGRICULTURAL 12 %  
 FOREST OR UNPRODUCTIVE 77 %  
 LAKE SURFACE 10 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

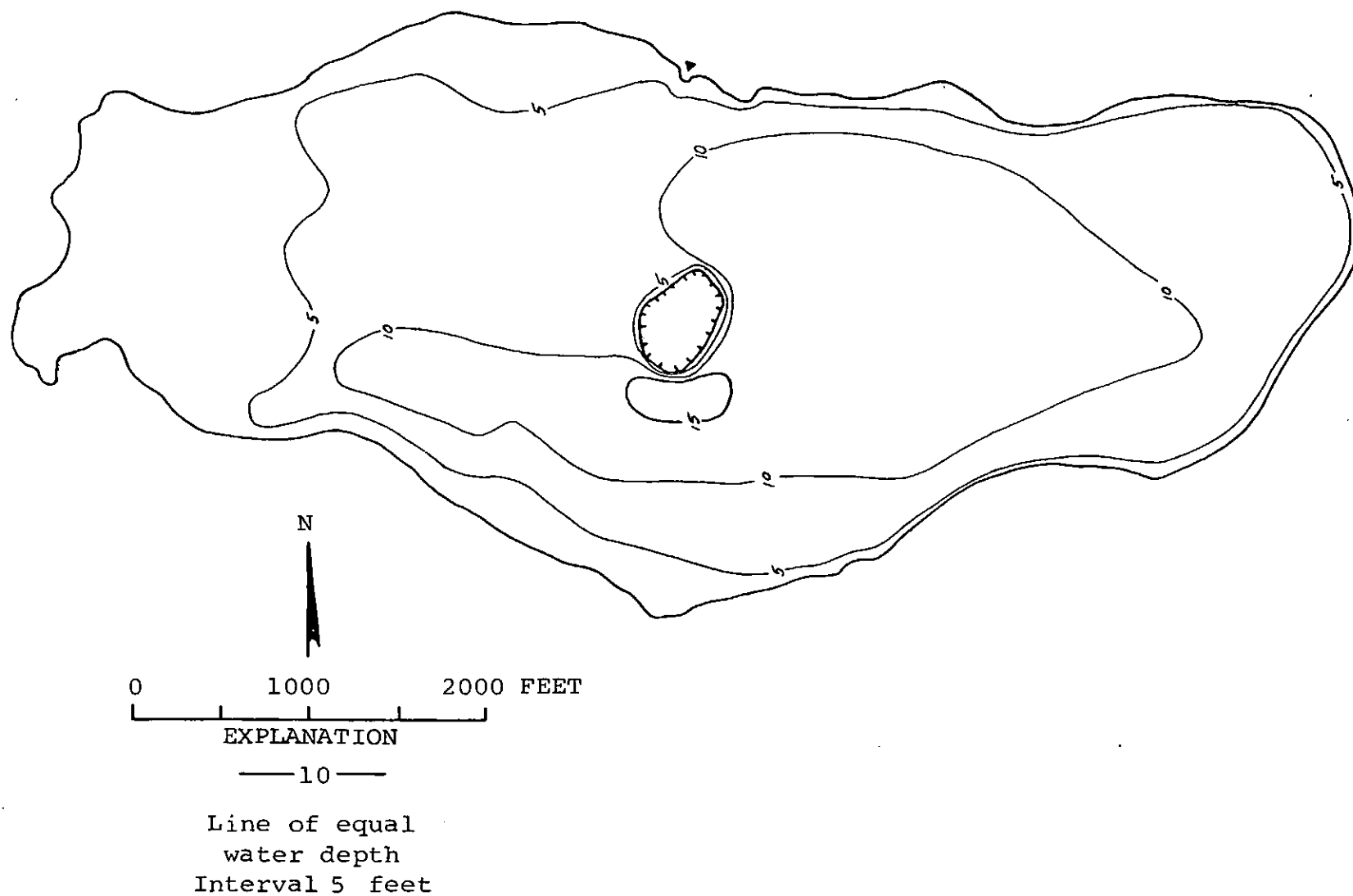
-----  
 SAMPLE SITE 1  
 DATE 8/21/73  
 TIME 1210 1215  
 DEPTH (FT) 3. 8.  
 TOTAL NITRATE (N) 0.02 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.07 0.06  
 TOTAL ORGANIC NITROGEN (N) 1.1 1.0  
 TOTAL PHOSPHORUS (P) 0.045 0.051  
 TOTAL ORTHOPHOSPHATE (P) 0.006 0.006  
 SPECIFIC CONDUCTANCE (MICROMHOS) 240 240  
 WATER TEMPERATURE (DEG C) 19.0 18.3  
 COLOR (PLATINUM-COBALT UNITS) 20 20  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 12.0 11.7

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/21/73  
 TIME 1220  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE HAS A HEAVY GROWTH OF BOTH EMERSED AND SUBMERSED PLANTS. AN  
 ALGAL BLOOM WAS OBSERVED.



Campbell Lake, Skagit County. From U.S. Geological Survey, September 17, 1973.



Campbell Lake, Skagit County. April 16, 1970. Approx. scale 1:12,000.

## CASKEY LAKE

## SKAGIT COUNTY

LATITUDE 48°24' 0" LONGITUDE 121°34'26" T34N-R9E-25  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.43 SQ MI  
ALTITUDE 630. FT  
LAKE AREA 14. ACRES  
LAKE VOLUME 140. ACRE-FT  
MEAN DEPTH 10. FT  
MAXIMUM DEPTH 19. FT  
SHORELINE LENGTH 0.65 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.52  
BOTTOM SLOPE 2.2 %  
BASIN GEOLOGY IGNEOUS  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 95 %  
LAKE SURFACE 5 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

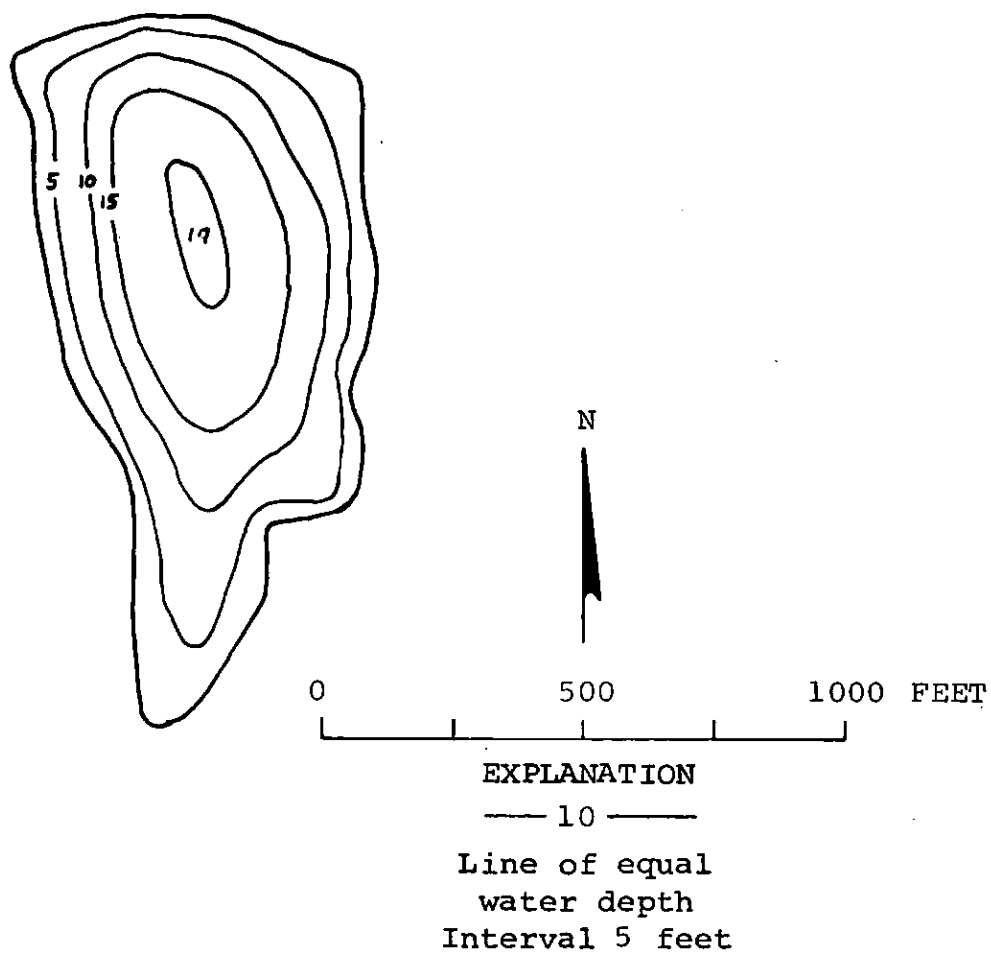
-----  
SAMPLE SITE 1  
DATE 8/14/73  
TIME 1340 1350  
DEPTH (FT) 3. 12.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.06 0.07  
TOTAL ORGANIC NITROGEN (N) 0.34 0.39  
TOTAL PHOSPHORUS (P) 0.013 0.019  
TOTAL ORTHOPHOSPHATE (P) 0.006 0.007  
SPECIFIC CONDUCTANCE (MICROMHOS) 13 14  
WATER TEMPERATURE (DEG C) 23.0 21.0  
COLOR (PLATINUM-COBALT UNITS) 15 15  
SECCHI-DISC VISIBILITY (FT) 7  
DISSOLVED OXYGEN 7.8 0.8

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/14/73  
TIME 1330  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

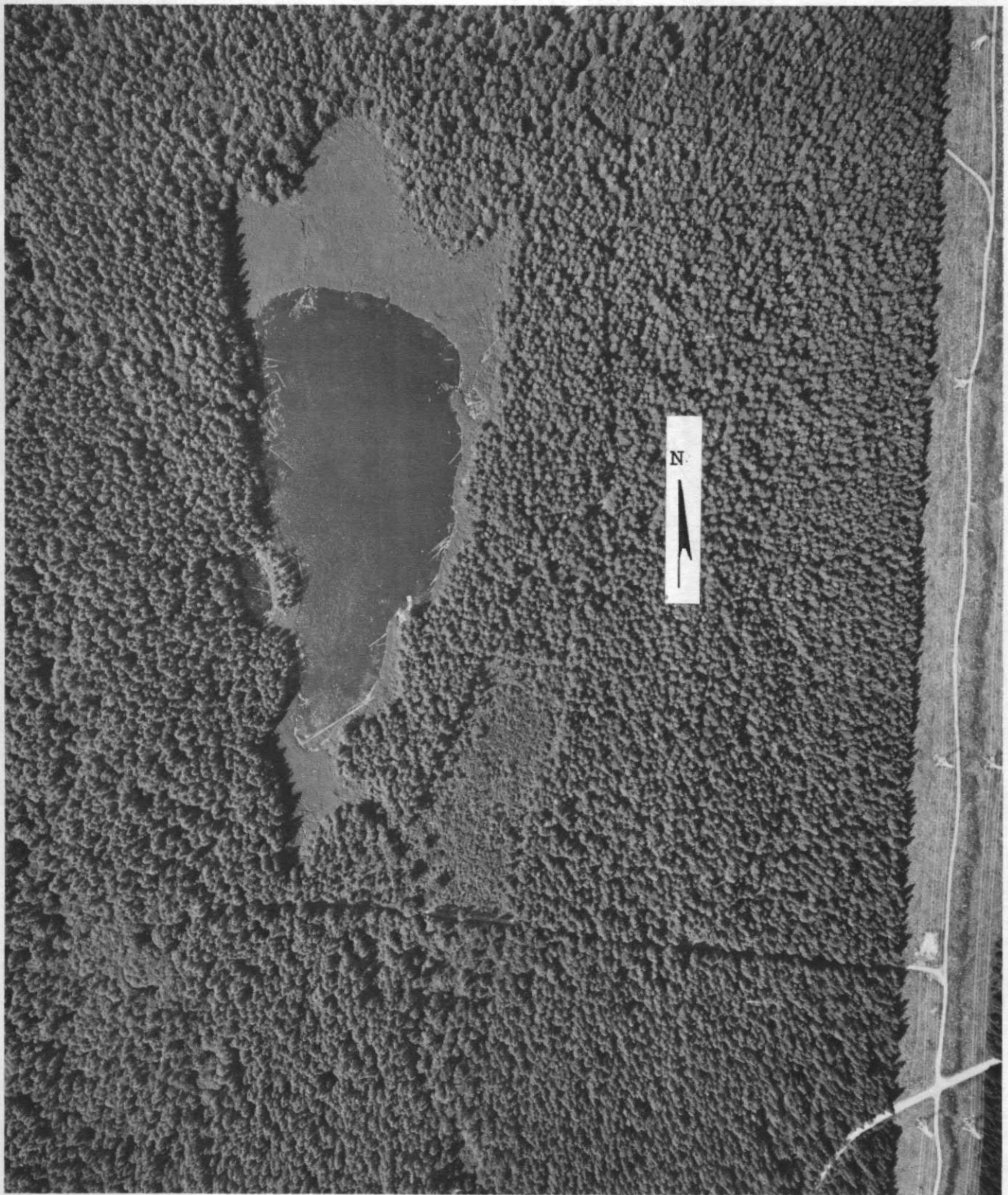
## REMARKS

-----  
THE LAKE HAS MANY LOGS ALONG THE SHORELINE.



Caskey Lake, Skagit County. From Washington Department of Game, September 17, 1947.





Caskey Lake, Skagit County. July 15, 1973. Approx. scale 1:4800.



## CAVANAUGH LAKE

## SKAGIT COUNTY

LATITUDE 48°19'50" LONGITUDE 122° 1' 9" T33N-R6E-22  
STILLAGUAMISH RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 7.36 SQ MI  
ALTITUDE 1008. FT  
LAKE AREA 800. ACRES  
LAKE VOLUME 36000. ACRE-FT  
MEAN DEPTH 44. FT  
MAXIMUM DEPTH 80. FT  
SHORELINE LENGTH 7.6 MI  
SHORELINE CONFIGURATION 1.9  
DEVELOPMENT OF VOLUME 0.56  
BOTTOM SLOPE 6.0 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 92 %  
NUMBER OF NEARSHORE HOMES 376  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 7 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 76 %  
LAKE SURFACE 17 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 7/15/71  
TIME 1145 1150  
DEPTH (FT) 3. 72.  
DISSOLVED NITRATE (N) 0.10 0.18  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.00 0.02  
TOTAL ORGANIC NITROGEN (N) 0.00 0.01  
TOTAL PHOSPHORUS (P) 0.000 0.000  
DISSOLVED ORTHOPHOSPHATE (P) 0.0 0.0  
SPECIFIC CONDUCTANCE (MICROMHOS) 30 29  
WATER TEMPERATURE (DEG C) 18.0 7.0  
COLOR (PLATINUM-COBALT UNITS) -- --  
SECCHI-DISC VISIBILITY (FT) 12  
DISSOLVED OXYGEN 10.1 7.6

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

DATE

8/ 6/74

TIME

1125

NUMBER OF FECAL COLIFORM SAMPLES

5

FECAL COLIFORM. MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM. MAXIMUM (COL./100ML)

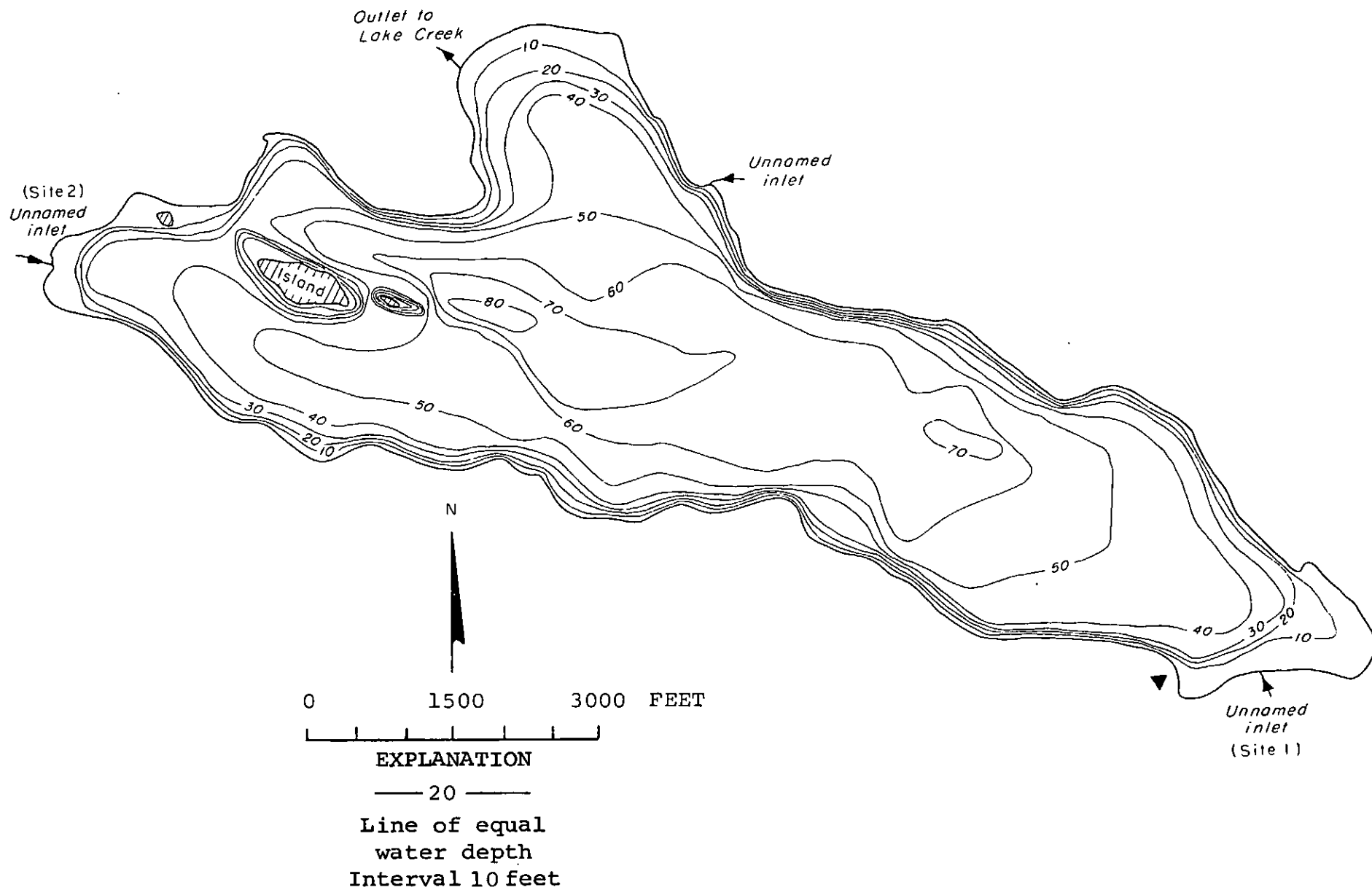
&lt;1

FECAL COLIFORM. MEAN (COL./100ML)

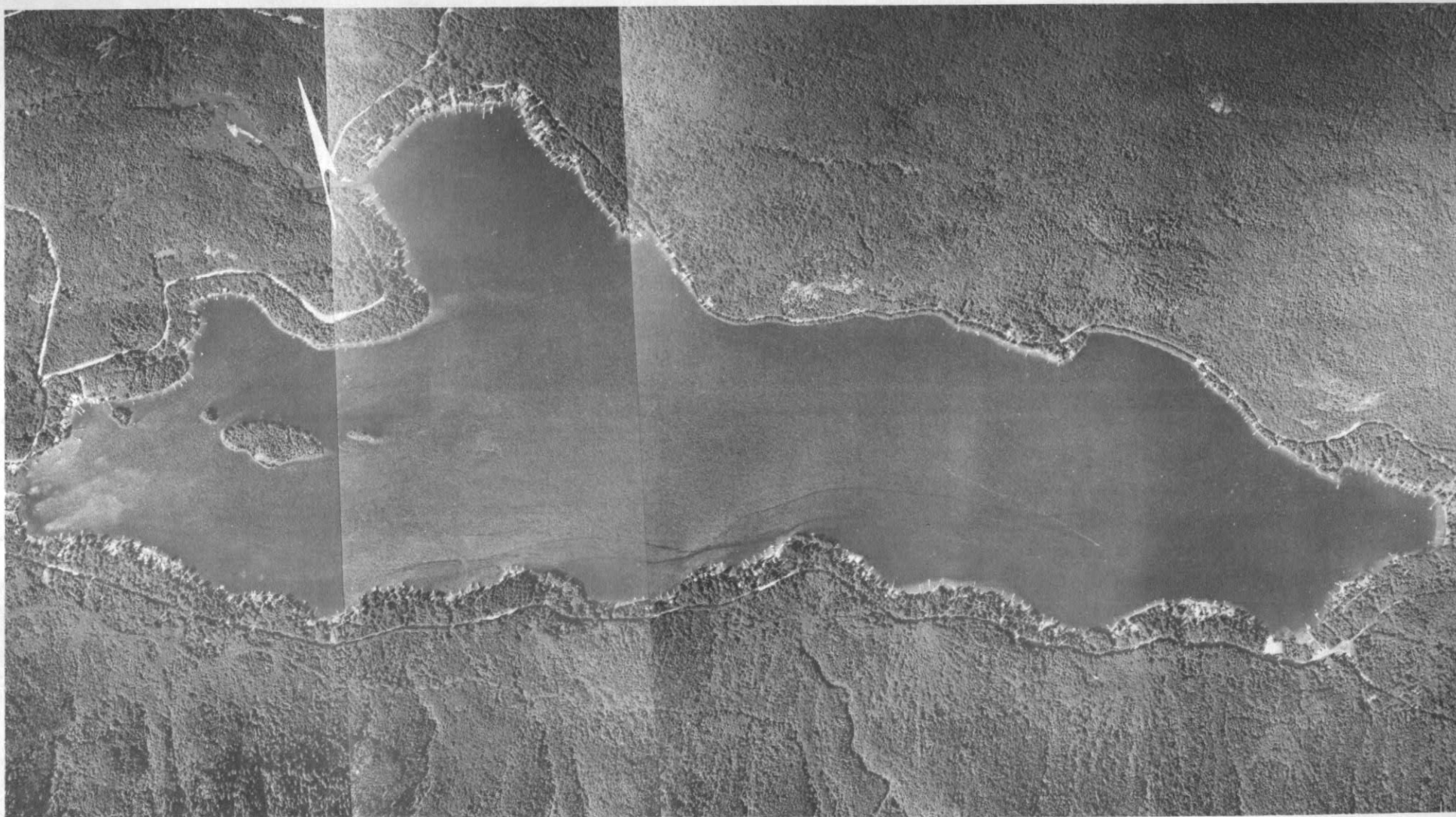
&lt;1

## REMARKS

-----  
IN 1971 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S.GEOLOGICAL SURVEY. THE  
PLANT SURVEY WAS CONDUCTED ON SEPTEMBER 24, 1971.



Cavanaugh Lake, Skagit County. From Washington Department of Game, August 25, 1953.



Cavanaugh Lake, Skagit County. July 14, 1971. Approx. scale 1:13,000.

## CLEAP (34N-5E-7) LAKE

## SKAGIT COUNTY

LATITUDE 48°27'15" LONGITUDE 122°13'26" T34N-R5E-7  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 2.40 SQ MI  
ALTITUDE 30. FT  
LAKE AREA 200. ACRES  
LAKE VOLUME 4600. ACRE-FT  
MEAN DEPTH 23. FT  
MAXIMUM DEPTH 44. FT  
SHORELINE LENGTH 2.4 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.52  
BOTTOM SLOPE 1.3 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 25 %  
NUMBER OF NEARSHORE HOMES 26  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 5 %  
RESIDENTIAL SUBURBAN 4 %  
AGRICULTURAL 24 %  
FOREST OR UNPRODUCTIVE 54 %  
LAKE SURFACE 13 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

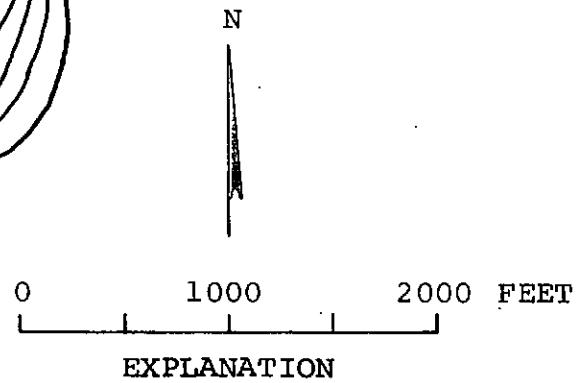
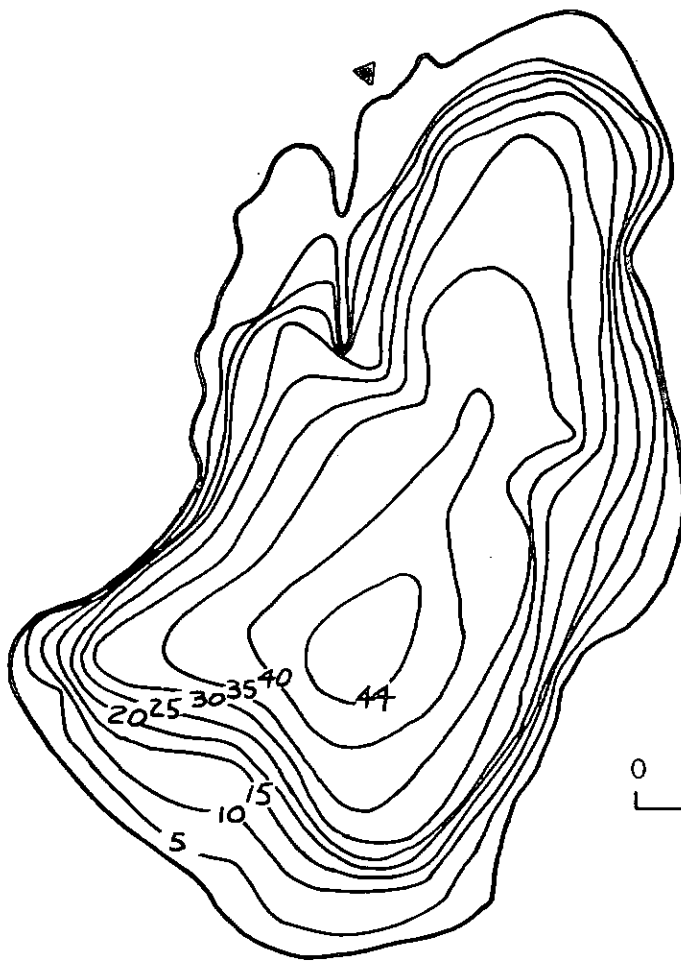
-----  
SAMPLE SITE 1  
DATE 7/ 3/73  
TIME 945 950  
DEPTH (FT) 3. 36.  
TOTAL NITRATE (N) 0.01 0.13  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.10  
TOTAL ORGANIC NITROGEN (N) 0.06 0.00  
TOTAL PHOSPHORUS (P) 0.005 0.016  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.003  
SPECIFIC CONDUCTANCE (MICROMHOS) 87 94  
WATER TEMPERATURE (DEG C) 119.3 8.5  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 15  
DISSOLVED OXYGEN 9.4 1.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 7/ 3/73  
TIME 1740  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) 2  
FECAL COLIFORM, MAXIMUM (COL./100ML) 5  
FECAL COLIFORM, MEAN (COL./100ML) 3

## REMARKS

-----  
EMERSED PLANTS COVERED MOST OF THE SHORELINE. APPROXIMATELY 30 PERCENT OF THE LAKE BOTTOM WAS COVERED BY SUBMERSED PLANTS. AN ALGAL BLOOM WAS OBSERVED. IN 1973 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S. GEOLOGICAL SURVEY. THE PLANT SURVEY WAS DONE ON AUGUST 22, 1973.



EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 5 feet

Clear (34N-5E-7) Lake, Skagit County. From Washington Department of Game, June 28, 1948.



Clear (34N-5E-7) Lake, Skagit County. July 30, 1973. Approx. scale 1:12,000.

## CLEAR (36N-9E-23) LAKE

## SKAGIT COUNTY

LATITUDE 48°35'38" LONGITUDE 121°35'40" T36N-R9E-23  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.20 SQ MI  
ALTITUDE 4075. FT  
LAKE AREA 18. ACRES  
LAKE VOLUME 480. ACRE-FT  
MEAN DEPTH 27. FT  
MAXIMUM DEPTH 53. FT  
SHORELINE LENGTH 0.65 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.51  
BOTTOM SLOPE 5.3 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 86 %  
LAKE SURFACE 14 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 8/17/73  
TIME 1130 1140  
DEPTH (FT) 3. 46.  
TOTAL NITRATE (N) 0.07 0.02  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.45  
TOTAL ORGANIC NITROGEN (N) 0.01 0.01  
TOTAL PHOSPHORUS (P) 0.011 0.073  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.023  
SPECIFIC CONDUCTANCE (MICROMHOS) 29 51  
WATER TEMPERATURE (DEG C) 13.0 4.0  
COLOR (PLATINUM-COBALT UNITS) 0 35  
SECCHI-DISC VISIBILITY (FT) 30  
DISSOLVED OXYGEN 9.0 0.5

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

DATE

8/17/73

TIME

1140

NUMBER OF FECAL COLIFORM SAMPLES

2

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

&lt;1

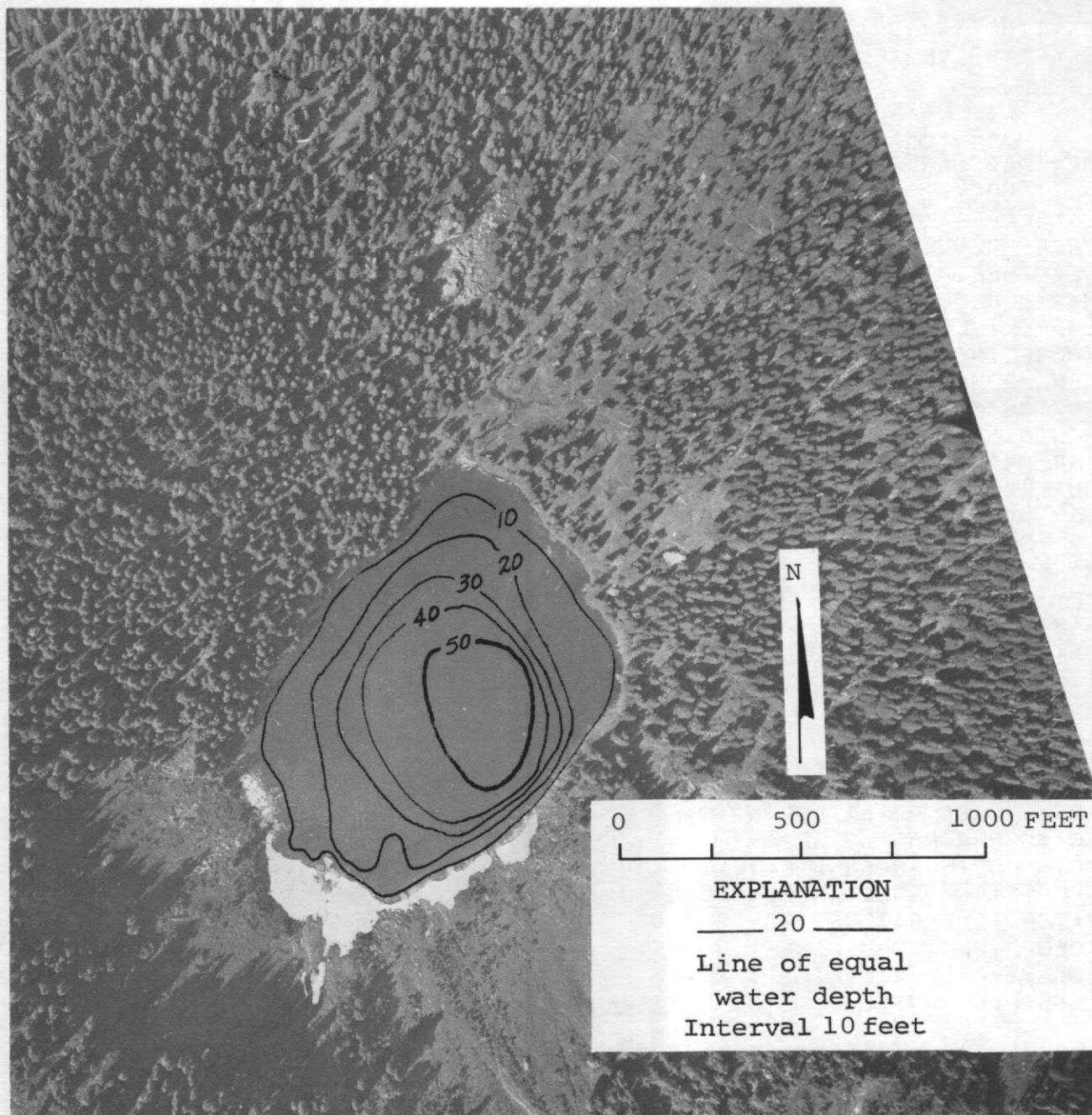
FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
THE LAKE HAS MANY LOGS AND SNAGS ALONG THE SHORELINE.





Clear (36N-9E-23) Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 28, 1973. Aerial photo, August 2, 1973.

## CRANBERRY LAKE

## SKAGIT COUNTY

LATITUDE 48°29'52" LONGITUDE 122°38'29" T35N-R1E-26  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.97 SQ MI  
 ALTITUDE 275. FT  
 LAKE AREA 24. ACRES  
 LAKE VOLUME 180. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 20. FT  
 SHORELINE LENGTH 1.8 MI  
 SHORELINE CONFIGURATION 2.6  
 DEVELOPMENT OF VOLUME 0.37  
 BOTTOM SLOPE 1.7 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 15 %  
 FOREST OR UNPRODUCTIVE 81 %  
 LAKE SURFACE 4 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

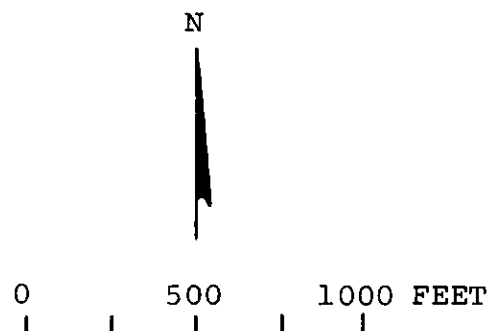
-----  
 SAMPLE SITE 1  
 DATE 8/21/73  
 TIME 1440 1445  
 DEPTH (FT) 3. 14.  
 TOTAL NITRATE (N) 0.02 0.49  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.10 0.18  
 TOTAL ORGANIC NITROGEN (N) 0.47 0.47  
 TOTAL PHOSPHORUS (P) 0.033 0.094  
 TOTAL ORTHOPHOSPHATE (P) 0.006 0.048  
 SPECIFIC CONDUCTANCE (MICROMHOS) 160 160  
 WATER TEMPERATURE (DEG C) 17.0 15.1  
 COLOR (PLATINUM-COBALT UNITS) 30 40  
 SECCHI-DISC VISIBILITY (FT) 7  
 DISSOLVED OXYGEN 8.2 1.3

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/21/73  
 TIME 1445  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 3  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 THE LAKE HAD A HEAVY GROWTH OF EMERSED AQUATIC MACROPHYTES ON THE NORTH AND SOUTH END OF THE LAKE. AN ALGAL BLOOM WAS OBSERVED. THE LAKE STAGE IS STABILIZED BY A DAM.



EXPLANATION  
——10——  
Line of equal  
water depth  
Interval 5 feet

Cranberry Lake, Skagit County. From Washington Department of Game, December 4, 1952.



Cranberry Lake, Skagit County. July 20, 1974. Approx. scale 1:4800.

## DAY LAKE

## SKAGIT COUNTY

LATITUDE 48°24'26" LONGITUDE 121°58'34" T34N-R6E-25  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 6.44 SQ MI  
ALTITUDE 1602. FT  
LAKE AREA 130. ACRES  
LAKE VOLUME 3100. ACRE-FT  
MEAN DEPTH 23. FT  
MAXIMUM DEPTH 48. FT  
SHORELINE LENGTH 3.1 MI  
SHORELINE CONFIGURATION 1.9  
DEVELOPMENT OF VOLUME 0.49  
BOTTOM SLOPE 1.8 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 97 %  
LAKE SURFACE 3 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

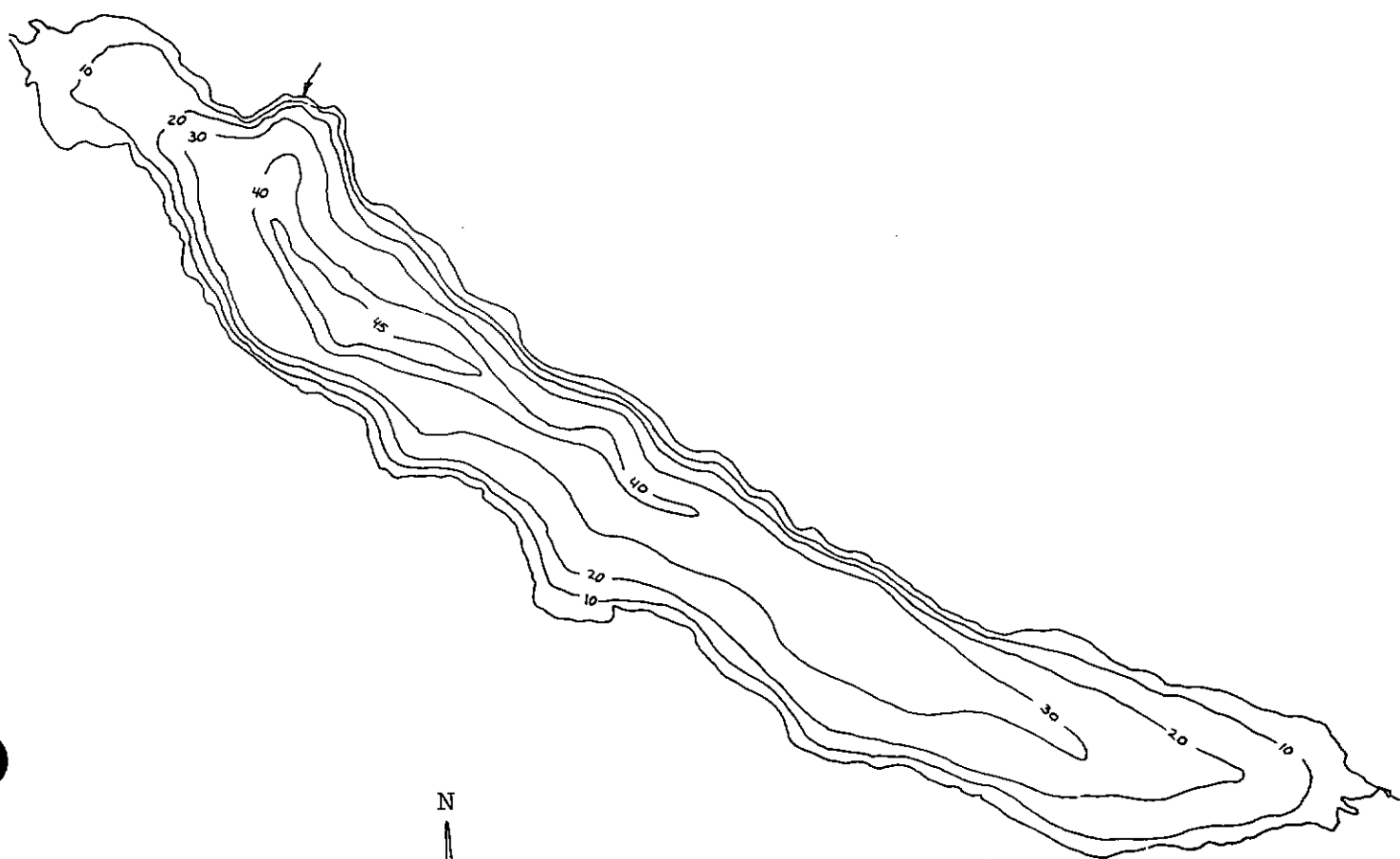
-----  
DATE 7/ 2/73  
TIME 1255 1300  
DEPTH (FT) 3. 39.  
TOTAL NITRATE (N) 0.07 0.12  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.06 0.07  
TOTAL ORGANIC NITROGEN (N) 0.03 0.01  
TOTAL PHOSPHORUS (P) 0.011 0.011  
DISSOLVED ORTHOPHOSPHATE (P) 0.002 0.004  
SPECIFIC CONDUCTANCE (MICROMHOS) 36 31  
WATER TEMPERATURE (DEG C) 15.5 8.1  
COLOR (PLATINUM-COBALT UNITS) 40 40  
SECCHI-DISC VISIBILITY (FT) 8  
DISSOLVED OXYGEN 9.1 5.7

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 7/ 2/73  
TIME 1345  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THE LAKE HAS MANY LOGS AND SNAGS IN THE WATER. IN 1973 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S.GEOLOGICAL SURVEY. THE PLANT SURVEY WAS DONE AUGUST 23, 1973.



0 1000 2000 FEET

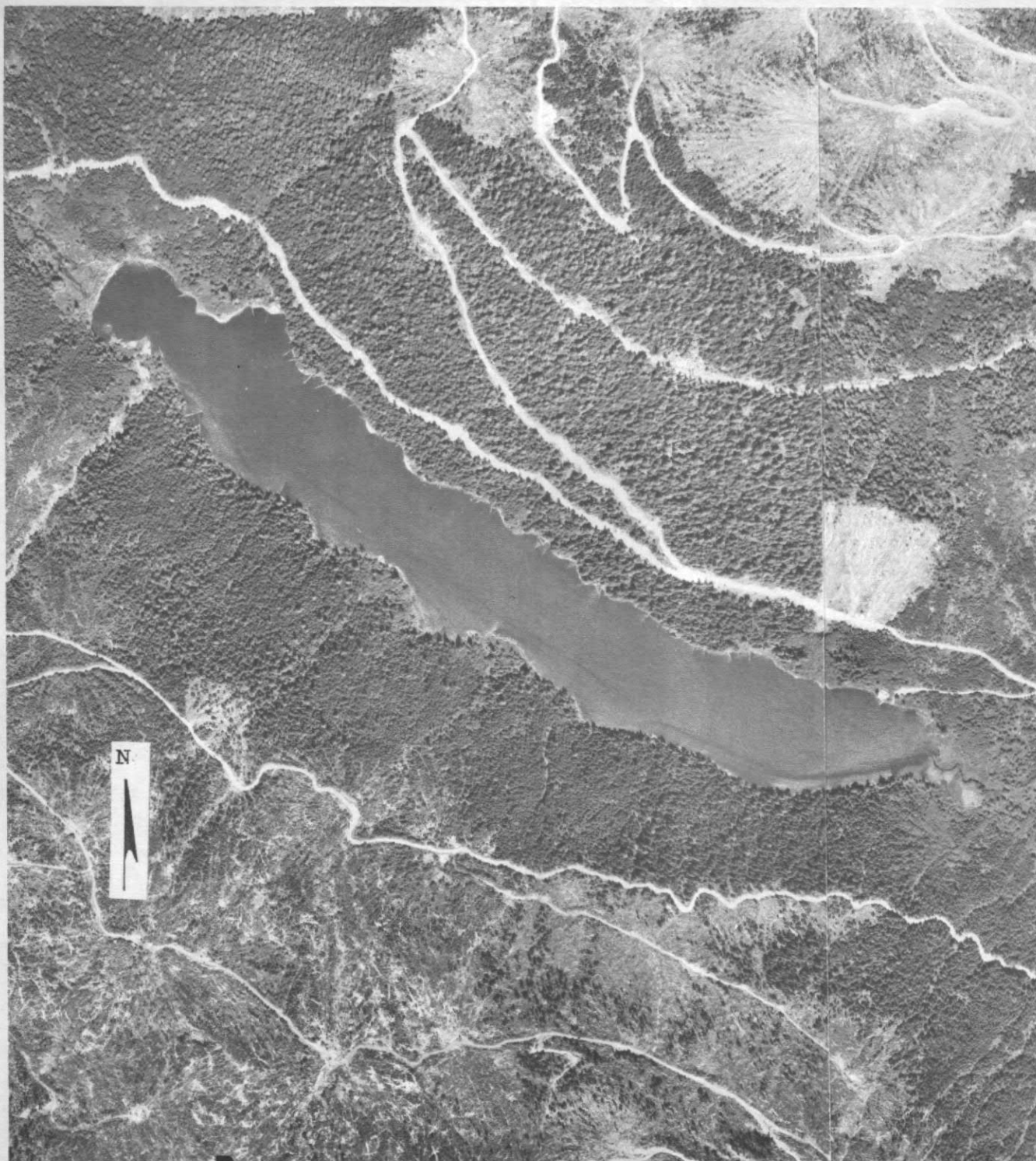
EXPLANATION

—20—

Line of equal  
water depth  
Interval 10 feet

Day Lake, Skagit County. From U.S. Geological Survey, August 23, 1973.





Day Lake, Skagit County. June 5, 1970. Approx. scale 1:12,000.



## DEVILS LAKE

## SKAGIT COUNTY

LATITUDE 48°21'18" LONGITUDE 122°14'40" T33N-R4E-13  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.90 SQ MI  
ALTITUDE 826. FT  
LAKE AREA 39. ACRES  
LAKE VOLUME 530. ACRE-FT  
MEAN DEPTH 14. FT  
MAXIMUM DEPTH 30. FT  
SHORELINE LENGTH 1.7 MI  
SHORELINE CONFIGURATION 2.0  
DEVELOPMENT OF VOLUME 0.45  
BOTTOM SLOPE 2.0 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 4 %  
NUMBER OF NEARSHORE HOMES 2  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 93 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

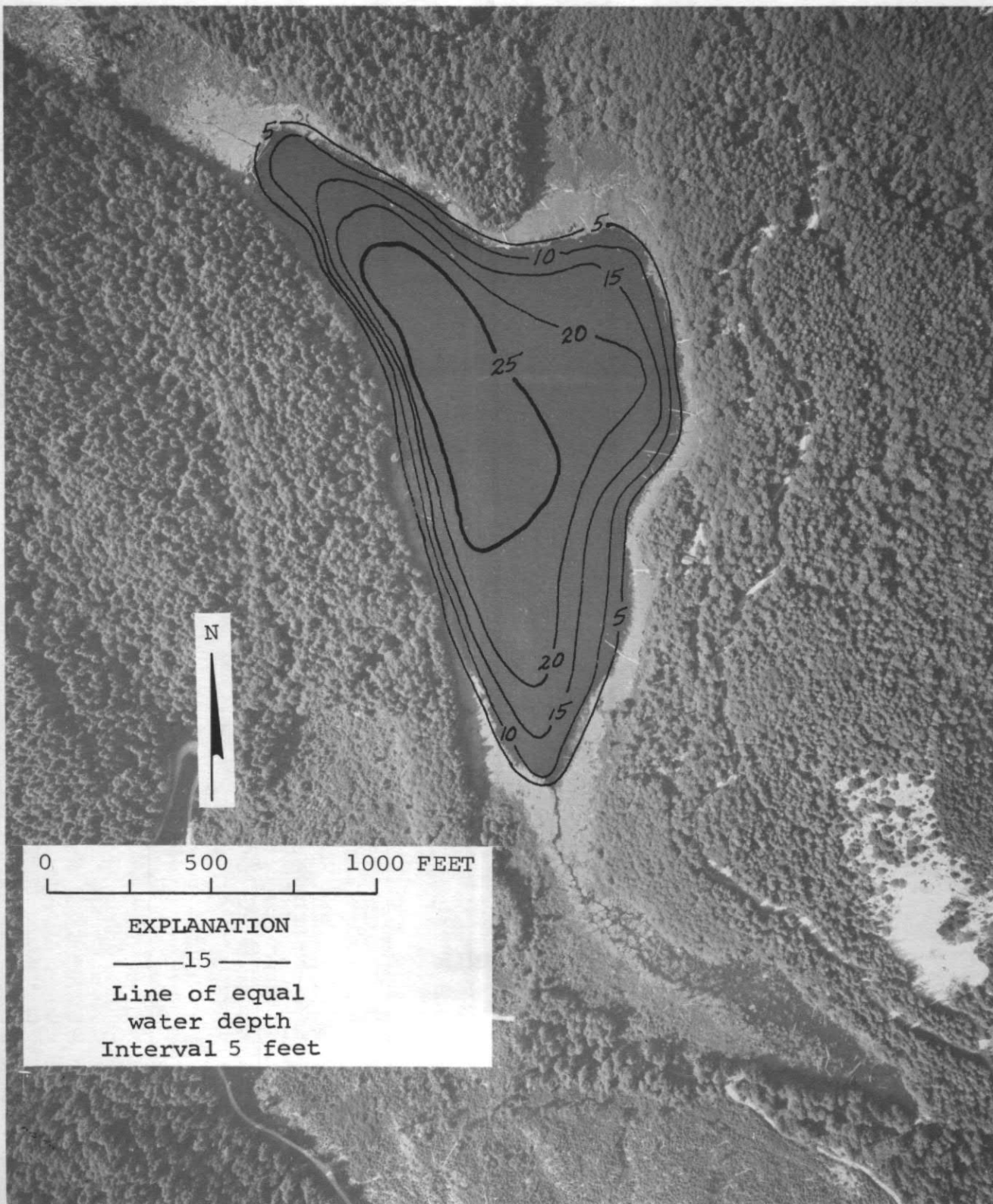
-----  
SAMPLE SITE 1  
DATE 8/21/73  
TIME 1645 1650  
DEPTH (FT) 3. 25.  
TOTAL NITRATE (N) 0.02 0.02  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.08 0.54  
TOTAL ORGANIC NITROGEN (N) 0.33 0.56  
TOTAL PHOSPHORUS (P) 0.013 0.067  
TOTAL ORTHOPHOSPHATE (P) 0.004 0.036  
SPECIFIC CONDUCTANCE (MICROMHOS) 100 110  
WATER TEMPERATURE (DEG C) 18.5 8.0  
COLOR (PLATINUM-COBALT UNITS) 35 85  
SECCHI-DISC VISIBILITY (FT) 7  
DISSOLVED OXYGEN 7.0 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 75-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 8/21/73  
TIME 1650  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THE LAKE HAD A HEAVY GROWTH OF BOTH EMERSED AND SUBMERSED PLANTS, ESPECIALLY ON THE NORTH AND SOUTH ENDS OF THE LAKE. HYDROGEN SULFIDE WAS DETECTED IN THE HYPOLIMNION.



Devils Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, October 2, 1973.  
Aerial photo, July 15, 1973.

ERIE LAKE

SKAGIT COUNTY

LATITUDE 48°26'59" LONGITUDE 122°38'15" T34N-R1E-11  
 PUGET SOUND BASIN

PHYSICAL DATA

-----  
 DRAINAGE AREA 1.62 SQ MI  
 ALTITUDE 90. FT  
 LAKE AREA 110. ACRES  
 LAKE VOLUME 710. ACRE-FT  
 MEAN DEPTH 6. FT  
 MAXIMUM DEPTH 12. FT  
 SHORELINE LENGTH 1.8 MI  
 SHORELINE CONFIGURATION 1.2  
 DEVELOPMENT OF VOLUME 0.52  
 BOTTOM SLOPE 0.48 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 32 %  
 NUMBER OF NEARSHORE HOMES 17  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 1 %  
 AGRICULTURAL 16 %  
 FOREST OR UNPRODUCTIVE 72 %  
 LAKE SURFACE 11 %  
 PUBLIC BOAT ACCESS TO LAKE YES

WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

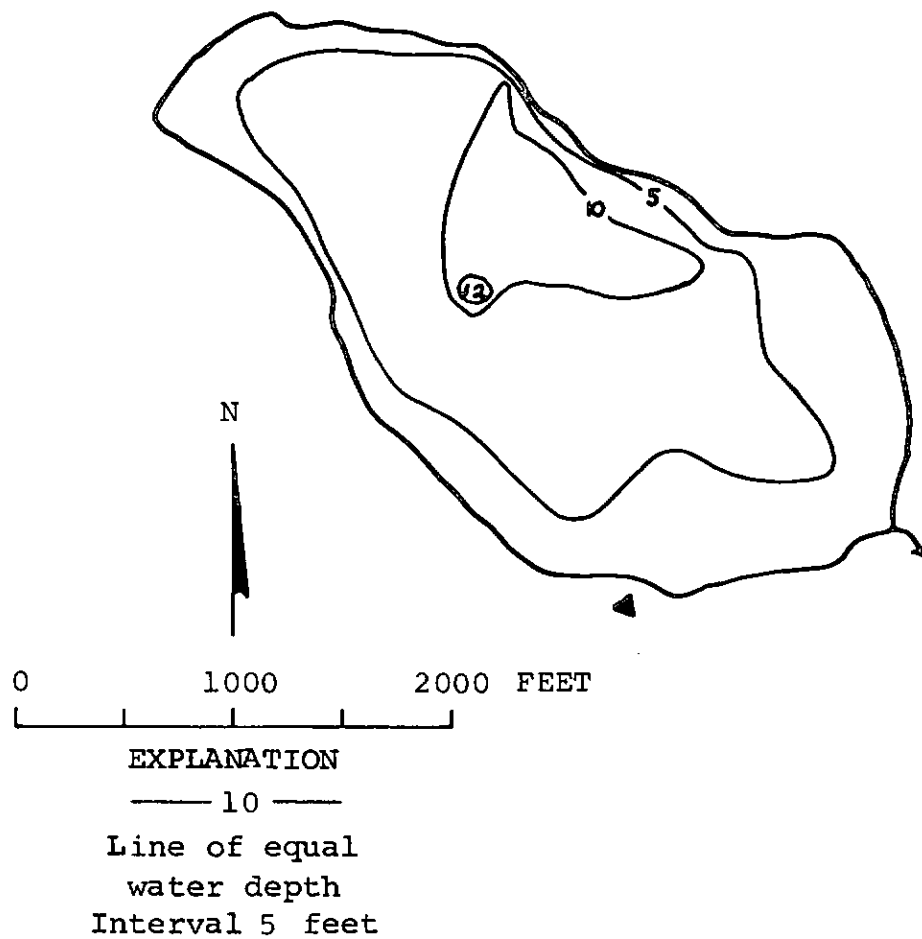
-----  
 SAMPLE SITE 1  
 DATE 8/21/73  
 TIME 1300 1305  
 DEPTH (FT) 3. 6.  
 TOTAL NITRATE (N) 0.01 --  
 TOTAL NITRITE (N) 0.01 --  
 TOTAL AMMONIA (N) 0.13 --  
 TOTAL ORGANIC NITROGEN (N) 1.1 --  
 TOTAL PHOSPHORUS (P) 0.062 --  
 TOTAL ORTHOPHOSPHATE (P) 0.013 --  
 SPECIFIC CONDUCTANCE (MICROMHOS) 240 --  
 WATER TEMPERATURE (DEG C) 18.6 18.3  
 COLOR (PLATINUM-COBALT UNITS) 25 --  
 SECCHI-DISC VISIBILITY (FT) 11  
 DISSOLVED OXYGEN 9.4 10.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 51- 75 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/21/73  
 TIME 1305  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) 2  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 6  
 FECAL COLIFORM, MEAN (COL./100ML) 4

REMARKS

-----  
 AN ALGAL BLOOM WAS OBSERVED. THE LAKE BOTTOM WAS ALMOST ENTIRELY COVERED  
 BY A HEAVY COVER OF SUBMERSED PLANTS (MOSTLY WATER MILFOIL AND ELODEA).  
 THE LITTORAL BOTTOM IS MOSTLY MUCK.



Erie Lake, Skagit County. From Washington Department of Game, December 3, 1974.



Erie Lake, Skagit County. July 21, 1969. Approx. scale 1:12,000.

## FALLS, LOWER LAKE

## SKAGIT COUNTY

LATITUDE 48°28' 5" LONGITUDE 121°23'34" T34N-R11E-4  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.67 SQ MI  
ALTITUDE 4023. FT  
LAKE AREA 54. ACRES  
LAKE VOLUME 4300. ACRE-FT  
MEAN DEPTH 80. FT  
MAXIMUM DEPTH 160. FT  
SHORELINE LENGTH 1.2 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.51  
BOTTOM SLOPE 8.9 %  
BASIN GEOLOGY IGNEOUS  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 84 %  
LAKE SURFACE 16 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 8/15/73  
TIME 1730 1740  
DEPTH (FT) 3. 79.  
TOTAL NITRATE (N) 0.01 0.03  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.03  
TOTAL ORGANIC NITROGEN (N) 0.00 0.06  
TOTAL PHOSPHORUS (P) 0.001 0.002  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 29 41  
WATER TEMPERATURE (DEG C) 18.0 4.0  
COLOP (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 56  
DISSOLVED OXYGEN 8.1 7.8

LAKE SHOPELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

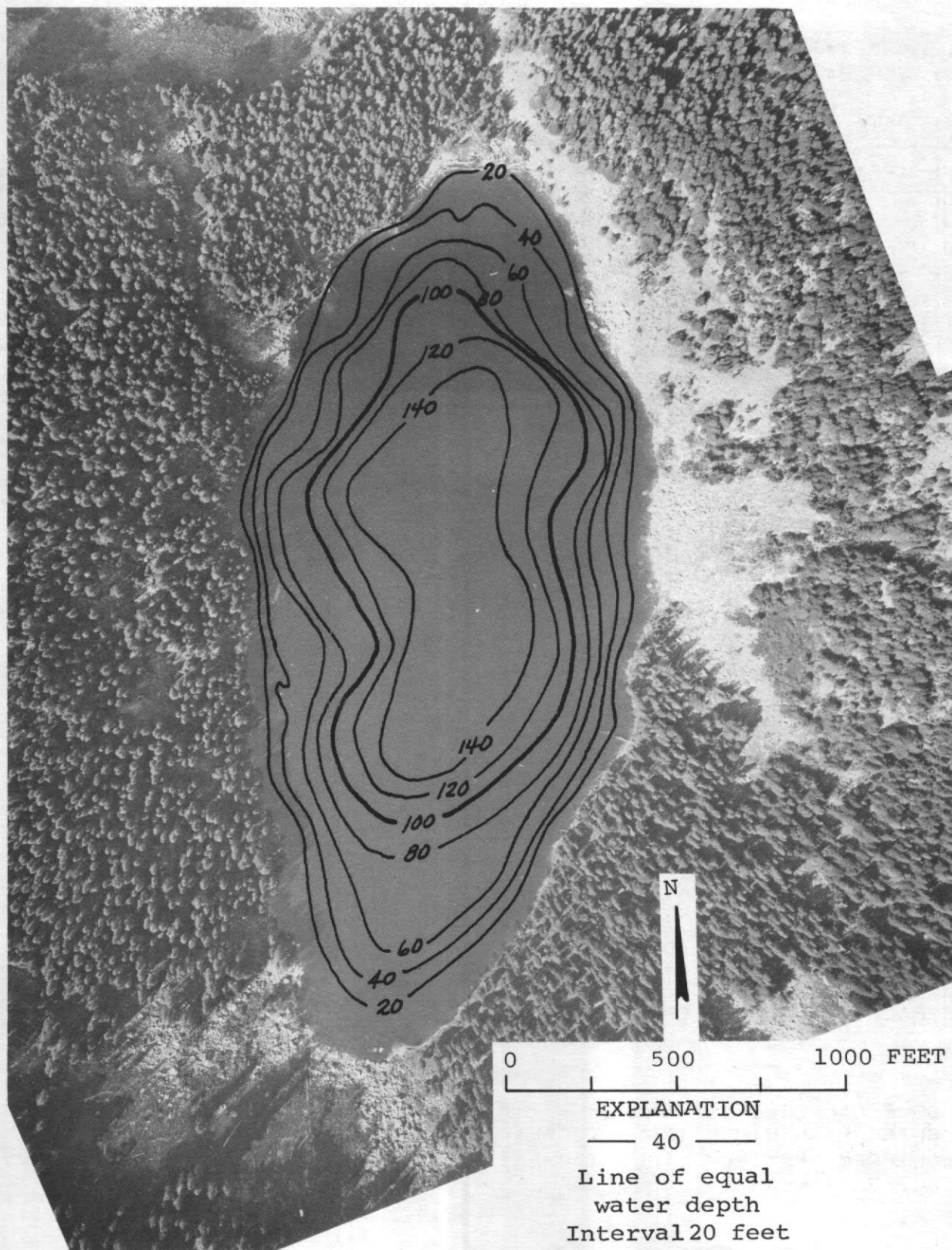
NONE OR &lt;1 %

DATE 8/15/73  
TIME 1800  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW AQUATIC PLANTS WERE OBSERVED.





Falls (Lower) Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 30, 1973.  
Aerial photo, August 2, 1973.



## FALLS, UPPER LAKE

## SKAGIT COUNTY

LATITUDE 48°27'27" LONGITUDE 121°23'47" T34N-R11E-5  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.19 SQ MI  
ALTITUDE 4513. FT  
LAKE AREA 17. ACRES  
LAKE VOLUME 450. ACRE-FT  
MEAN DEPTH 26. FT  
MAXIMUM DEPTH 45. FT  
SHORELINE LENGTH 0.62 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.58  
BOTTOM SLOPE 4.6 %  
BASIN GEOLOGY IGNEOUS  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 86 %  
LAKE SURFACE 14 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

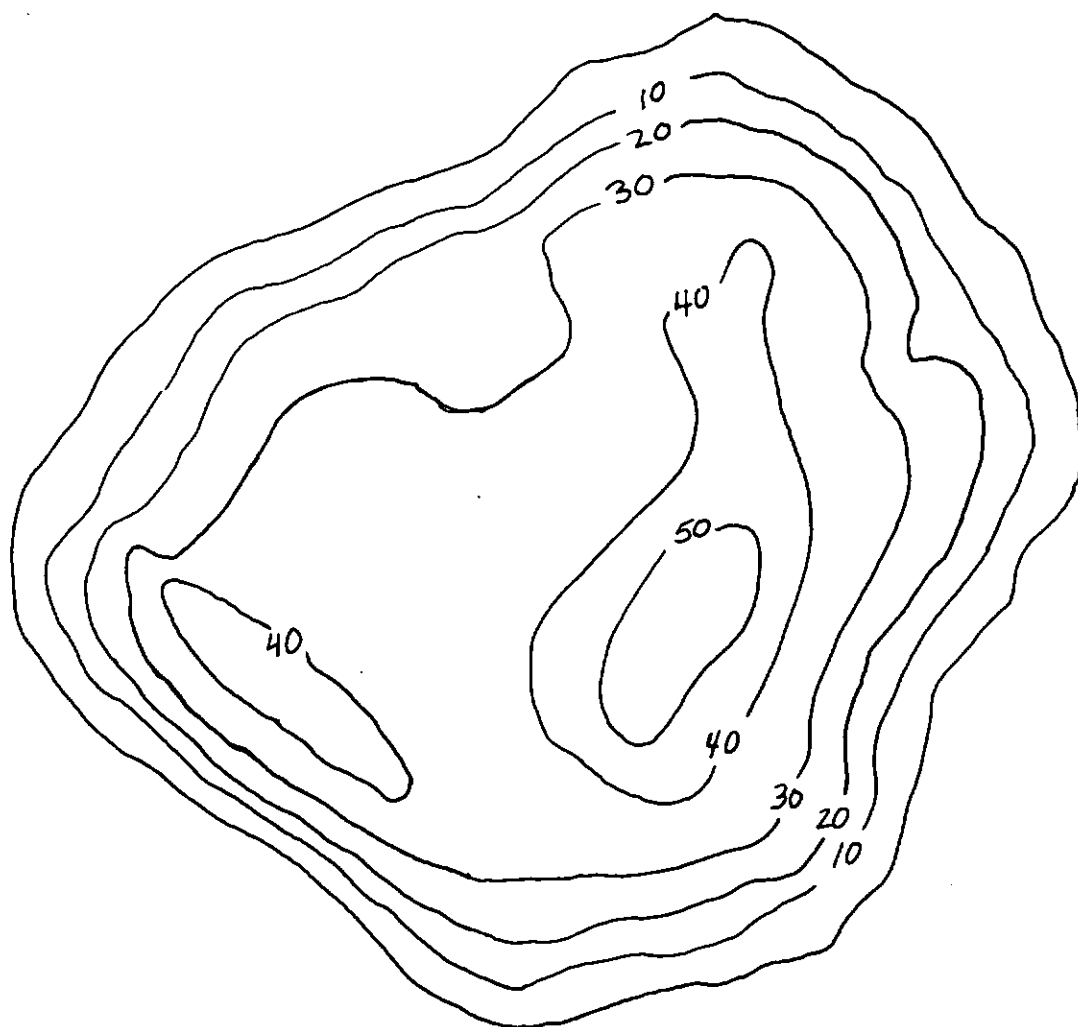
-----  
SAMPLE SITE 1  
DATE 8/15/73  
TIME 1600 1610  
DEPTH (FT) 3. 36.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.03  
TOTAL ORGANIC NITROGEN (N) 0.01 0.02  
TOTAL PHOSPHORUS (P) 0.005 0.006  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.000  
SPECIFIC CONDUCTANCE (MICROMHOS) 10 22  
WATER TEMPERATURE (DEG C) 17.8 4.8  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 39  
DISSOLVED OXYGEN 7.9 5.0

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/15/73  
TIME 1615  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW AQUATIC PLANTS WERE OBSERVED.



N



0 200 400 FEET



EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 10 feet

Falls (Upper) Lake, Skagit County. From U.S. Geological Survey, September 25, 1973.



Falls (Upper) Lake, Skagit County. August 2, 1973. Approx. scale 1:4800.

## GRANDY LAKE

## SKAGIT COUNTY

LATITUDE 48°33'45" LONGITUDE 121°48'33" T36N-R8E-31  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 4.90 SQ MI  
ALTITUDE 809. FT  
LAKE AREA 63. ACRES  
LAKE VOLUME 410. ACRE-FT  
MEAN DEPTH 7. FT  
MAXIMUM DEPTH 13. FT  
SHORELINE LENGTH 2.0 MI  
SHORELINE CONFIGURATION 1.8  
DEVELOPMENT OF VOLUME 0.50  
BOTTOM SLOPE 0.70 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 1 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 97 %  
LAKE SURFACE 2 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

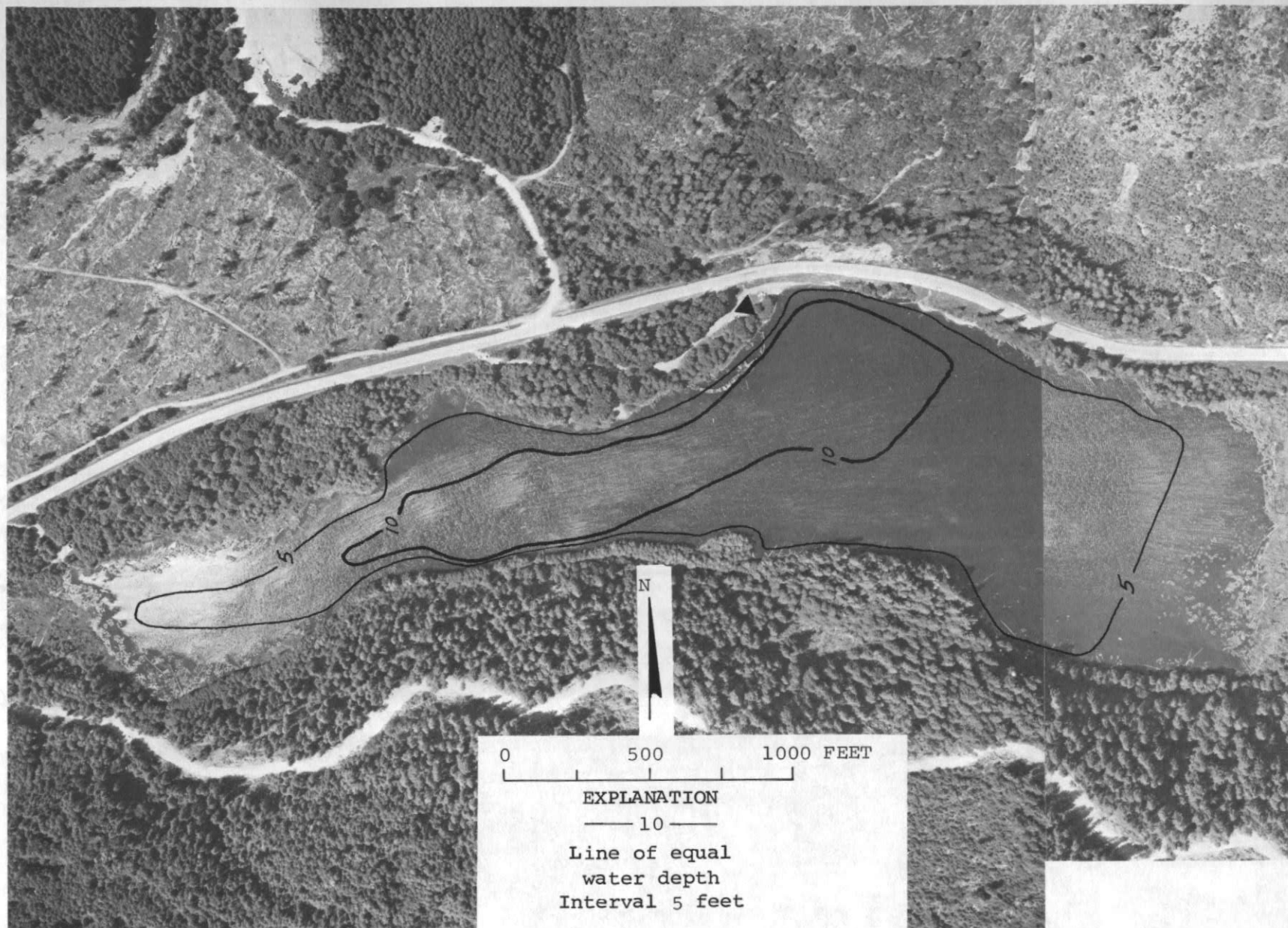
-----  
SAMPLE SITE 1  
DATE 8/17/73  
TIME 1300 1305  
DEPTH (FT) 3. 8.  
TOTAL NITRATE (N) 0.59 --  
TOTAL NITRITE (N) 0.00 --  
TOTAL AMMONIA (N) 0.06 --  
TOTAL ORGANIC NITROGEN (N) 0.15 --  
TOTAL PHOSPHORUS (P) 0.009 --  
TOTAL ORTHOPHOSPHATE (P) 0.001 --  
SPECIFIC CONDUCTANCE (MICROMHOS) 130 --  
WATER TEMPERATURE (DEG C) 19.0 18.9  
COLOR (PLATINUM-COBALT UNITS) 0 --  
SECCHI-DISC VISIBILITY (FT) >10  
DISSOLVED OXYGEN 7.7 7.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 8/17/73  
TIME 1300  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
MOST OF THE EMERSED AND SUBMERSED PLANTS WERE ON THE EAST AND WEST END OF THE LAKE. THE NEARBY HILLS HAVE BEEN LOGGED. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Grandy Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, October 1, 1973.  
Aerial photo, July 15, 1973.

## GRANITE LAKE

## SKAGIT COUNTY

LATITUDE 48°20'51" LONGITUDE 121°50'33" T33N-R7E-13  
 STILLAGUAMISH RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.23 SQ MI  
 ALTITUDE 3521. FT  
 LAKE AREA 10. ACRES  
 LAKE VOLUME 120. ACRE-FT  
 MEAN DEPTH 12. FT  
 MAXIMUM DEPTH 39. FT  
 SHORELINE LENGTH 1.1 MI  
 SHORELINE CONFIGURATION 2.5  
 DEVELOPMENT OF VOLUME 0.31  
 BOTTOM SLOPE 5.3 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 91 %  
 LAKE SURFACE 9 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/13/73  
 TIME 1830 1835  
 DEPTH (FT) 3. 7.  
 TOTAL NITRATE (N) 0.01 --  
 TOTAL NITRITE (N) 0.00 --  
 TOTAL AMMONIA (N) 0.04 --  
 TOTAL ORGANIC NITROGEN (N) 0.11 --  
 TOTAL PHOSPHORUS (P) 0.009 --  
 TOTAL ORTHOPHOSPHATE (P) 0.001 --  
 SPECIFIC CONDUCTANCE (MICROMHOS) 23 --  
 WATER TEMPERATURE (DEG C) 21.0 20.0  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) >10  
 DISSOLVED OXYGEN 8.1 8.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/13/73  
 TIME 1830  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 MOST OF THE EMERSED PLANTS WERE OBSERVED IN THE SHALLOW BAY AREAS.





Granite Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 26, 1973.  
Aerial photo, July 15, 1973.



## HEART (35N-1E-36) LAKE

SKAGIT COUNTY

LATITUDE 48°28'41" LONGITUDE 122°37'41" T35N-R1E-36  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.70 SQ MI  
 ALTITUDE 325. FT  
 LAKE AREA 66. ACRES  
 LAKE VOLUME 610. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 19. FT  
 SHORELINE LENGTH 1.8 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.48  
 BOTTOM SLOPE 0.99 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 85 %  
 LAKE SURFACE 15 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

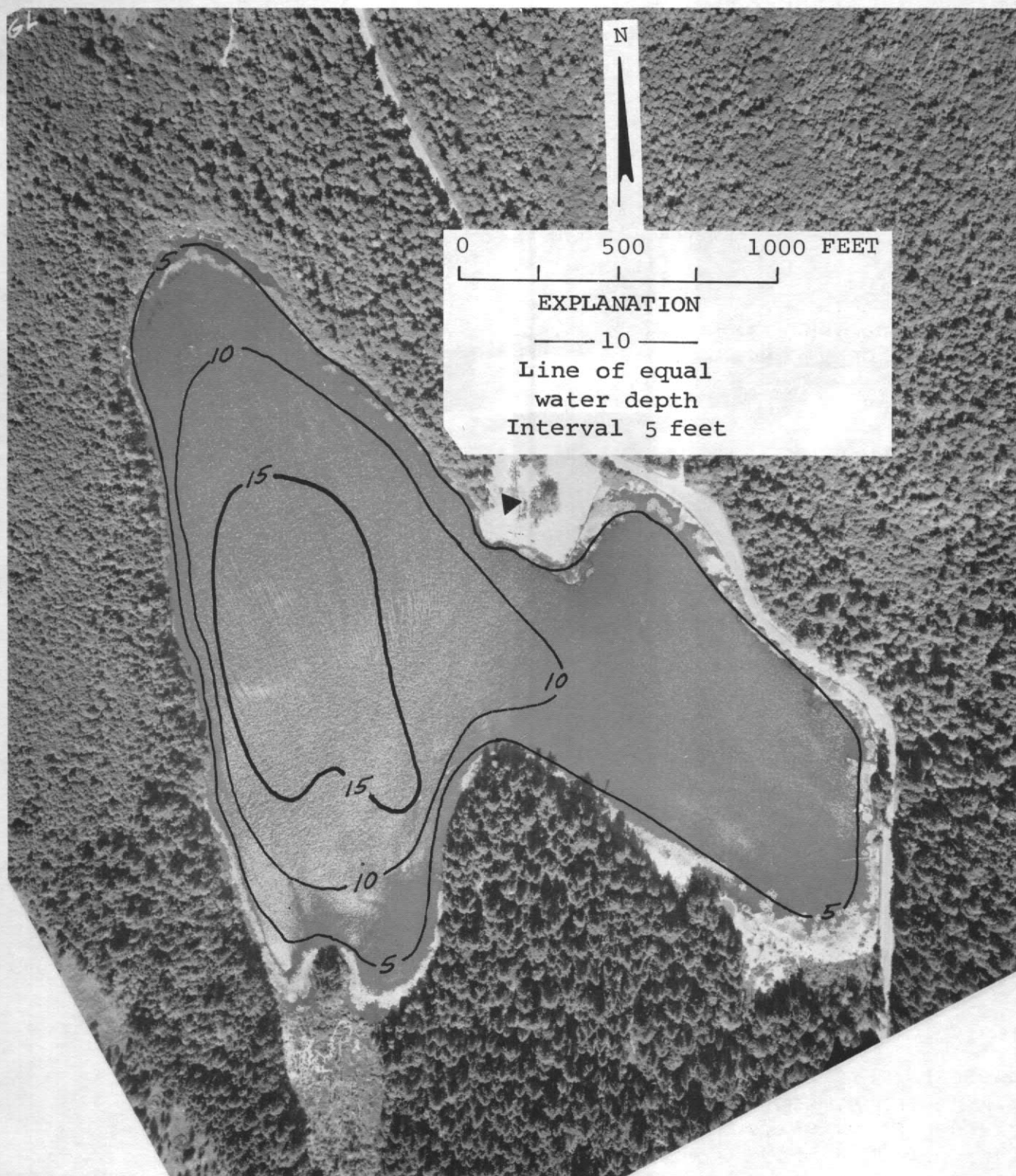
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 SAMPLE SITE 1  
 DATE 8/20/73  
 TIME 1135 1140  
 DEPTH (FT) 3. 30.  
 TOTAL NITRATE (N) 0.01 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.03 0.03  
 TOTAL ORGANIC NITROGEN (N) 0.04 0.09  
 TOTAL PHOSPHORUS (P) 0.003 0.005  
 TOTAL ORTHOPHOSPHATE (P) 0.001 0.003  
 SPECIFIC CONDUCTANCE (MICROMHOS) 12 14  
 WATER TEMPERATURE (DEG C) 13.0 4.8  
 COLOR (PLATINUM-COBALT UNITS) 45 20  
 SECCHI-DISC VISIBILITY (FT) 3  
 DISSOLVED OXYGEN 9.2 8.5

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/21/73  
 TIME 1400  
 NUMBER OF FECAL COLIFORM SAMPLES 3  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 EMERSED PLANTS COVERED NEARLY THE ENTIRE SHORELINE. AN ALGAL BLOOM WAS OBSERVED. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Heart (35N-1E-36) Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 18, 1973. Aerial photo, July 30, 1973.

## HEART (36N-7E-5) LAKE

## SKAGIT COUNTY

LATITUDE 48°38'41" LONGITUDE 121°55'28" T36N-R7E-5  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.29 SQ MI  
 ALTITUDE 4050. FT  
 LAKE AREA 13. ACRES  
 LAKE VOLUME 290. ACRE-FT  
 MEAN DEPTH 23. FT  
 MAXIMUM DEPTH 40. FT  
 SHORELINE LENGTH 0.64 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.58  
 BOTTOM SLOPE 4.8 %  
 BASIN GEOLOGY IGNEOUS  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 93 %  
 LAKE SURFACE 7 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

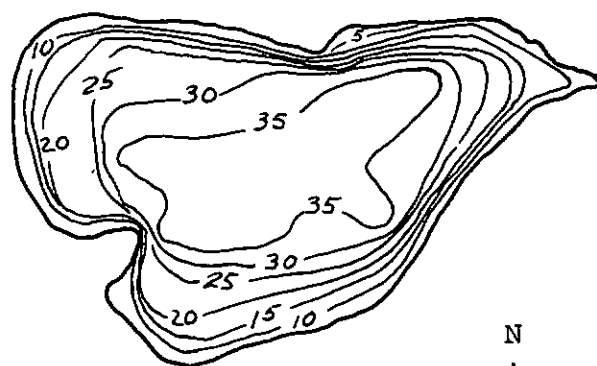
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 SAMPLE SITE 1  
 DATE 8/21/73  
 TIME 1345 1350  
 DEPTH (FT) 3. 12.  
 TOTAL NITRATE (N) 0.02 0.18  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.27 0.25  
 TOTAL ORGANIC NITROGEN (N) 1.5 1.2  
 TOTAL PHOSPHORUS (P) 0.18 0.078  
 TOTAL ORTHOPHOSPHATE (P) 0.003 0.029  
 SPECIFIC CONDUCTANCE (MICROMHOS) 230 230  
 WATER TEMPERATURE (DEG C) 17.5 17.0  
 COLOR (PLATINUM-COBALT UNITS) 5 5  
 SECCHI-DISC VISIBILITY (FT) 27  
 DISSOLVED OXYGEN 11.9 4.2

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/20/73  
 TIME 1140  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 NO AQUATIC PLANTS WERE OBSERVED.



N

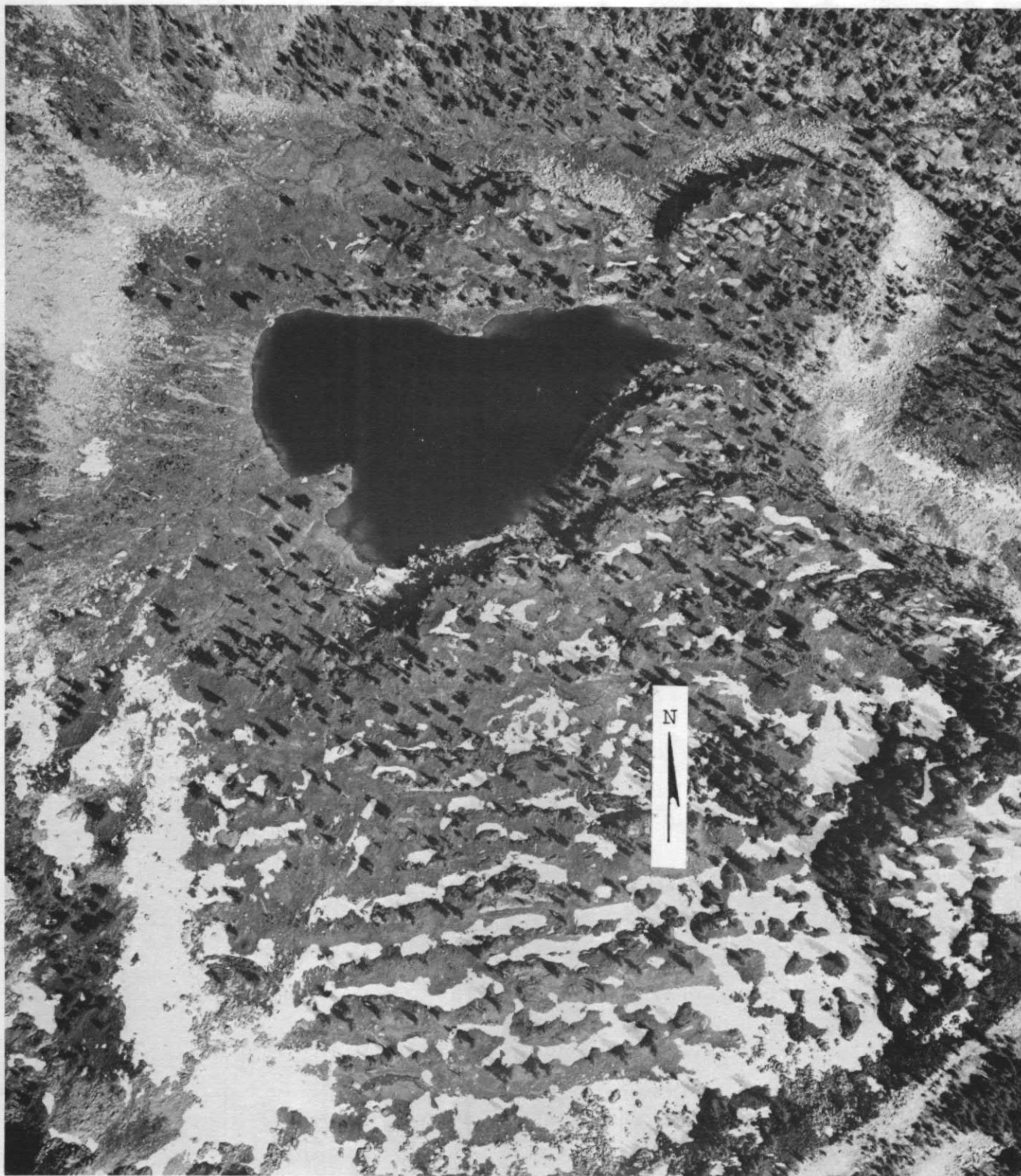
0 500 1000 FEET

EXPLANATION

— 10 —

Line of equal  
water depth  
Interval 5 feet

Heart (36N-7E-5) Lake, Skagit County. From U.S. Geological Survey, September 30, 1973.



Heart (36N-7E-5) Lake, Skagit County. July 16, 1973. Approx. scale 1:4800.

## JORDAN, LOWER LAKE

## SKAGIT COUNTY

LATITUDE 48°27' 4" LONGITUDE 121°21'43" T34N-R11E-10  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 2.24 SQ MI  
ALTITUDE 4032. FT  
LAKE AREA 49. ACRES  
LAKE VOLUME 2300. ACRE-FT  
MEAN DEPTH 47. FT  
MAXIMUM DEPTH 110. FT  
SHORELINE LENGTH 1.4 MI  
SHORELINE CONFIGURATION 1.4  
DEVELOPMENT OF VOLUME 0.44  
BOTTOM SLOPE 6.5 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 92 %  
LAKE SURFACE 8 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/15/73  
TIME 1500 1510  
DEPTH (FT) 3. 49.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.03  
TOTAL ORGANIC NITROGEN (N) 0.08 0.04  
TOTAL PHOSPHORUS (P) 0.005 0.001  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.001  
SPECIFIC CONDUCTANCE (MICROMHOS) 13 16  
WATER TEMPERATURE (DEG C) 17.0 4.0  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 46  
DISSOLVED OXYGEN 8.8 9.3

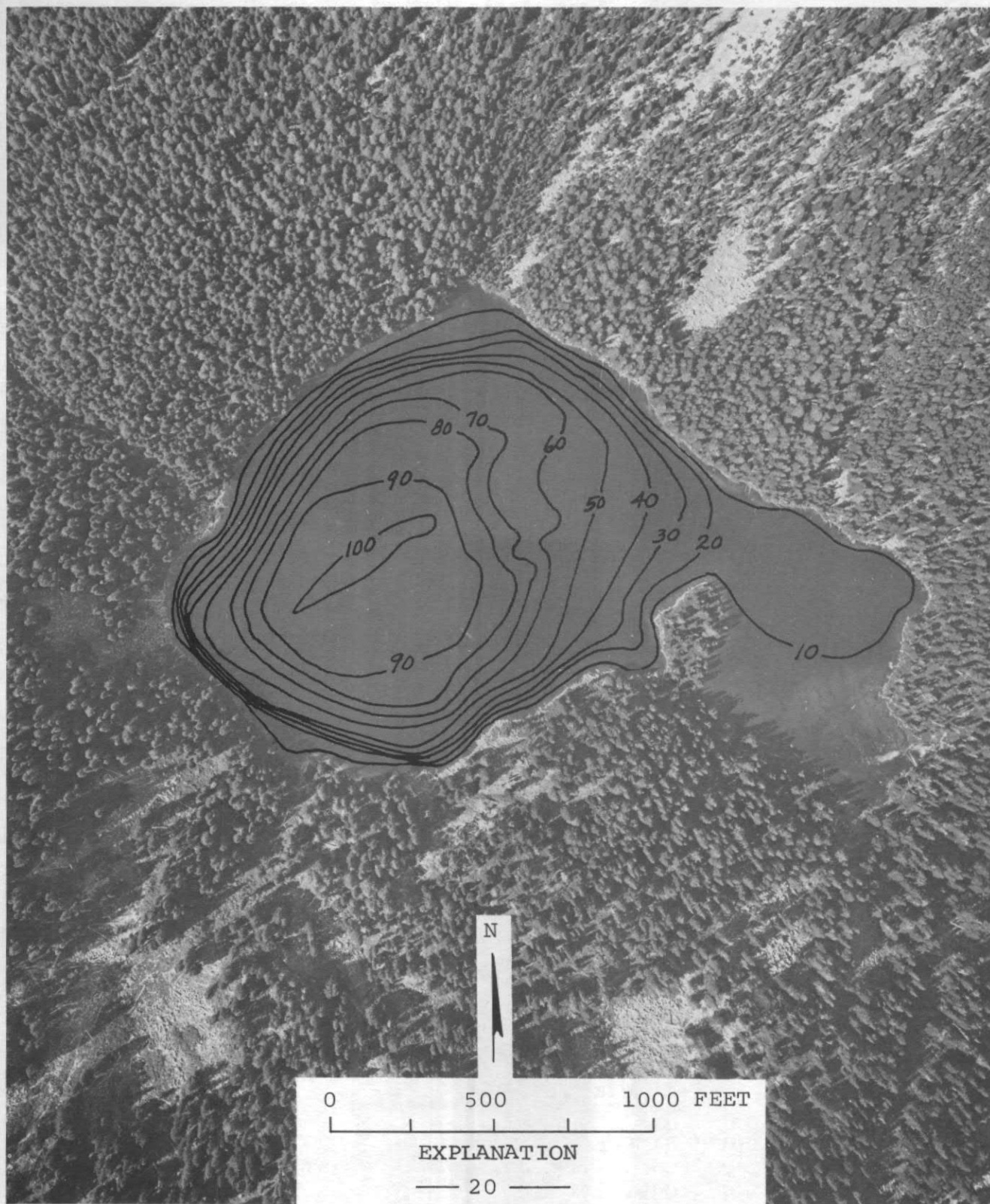
LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/15/73  
TIME 1500  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW AQUATIC MACROPHYTES WERE OBSERVED. LOGS COVERED MUCH OF THE SHORELINE.





Jordan Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 25, 1973.  
Aerial photo, August 2, 1973.



## JUG LAKE

## SKAGIT COUNTY

LATITUDE 48°23'18" LONGITUDE 121°22'33" T34N-R11E-34  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 1.15 SQ MI  
ALTITUDE 3900. FT  
LAKE AREA 18. ACRES  
LAKE VOLUME 300. ACRE-FT  
MEAN DEPTH 17. FT  
MAXIMUM DEPTH 34. FT  
SHORELINE LENGTH 0.67 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.50  
BOTTOM SLOPE 3.4 %  
BASIN GEOLOGY IGNEOUS  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 97 %  
LAKE SURFACE 3 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

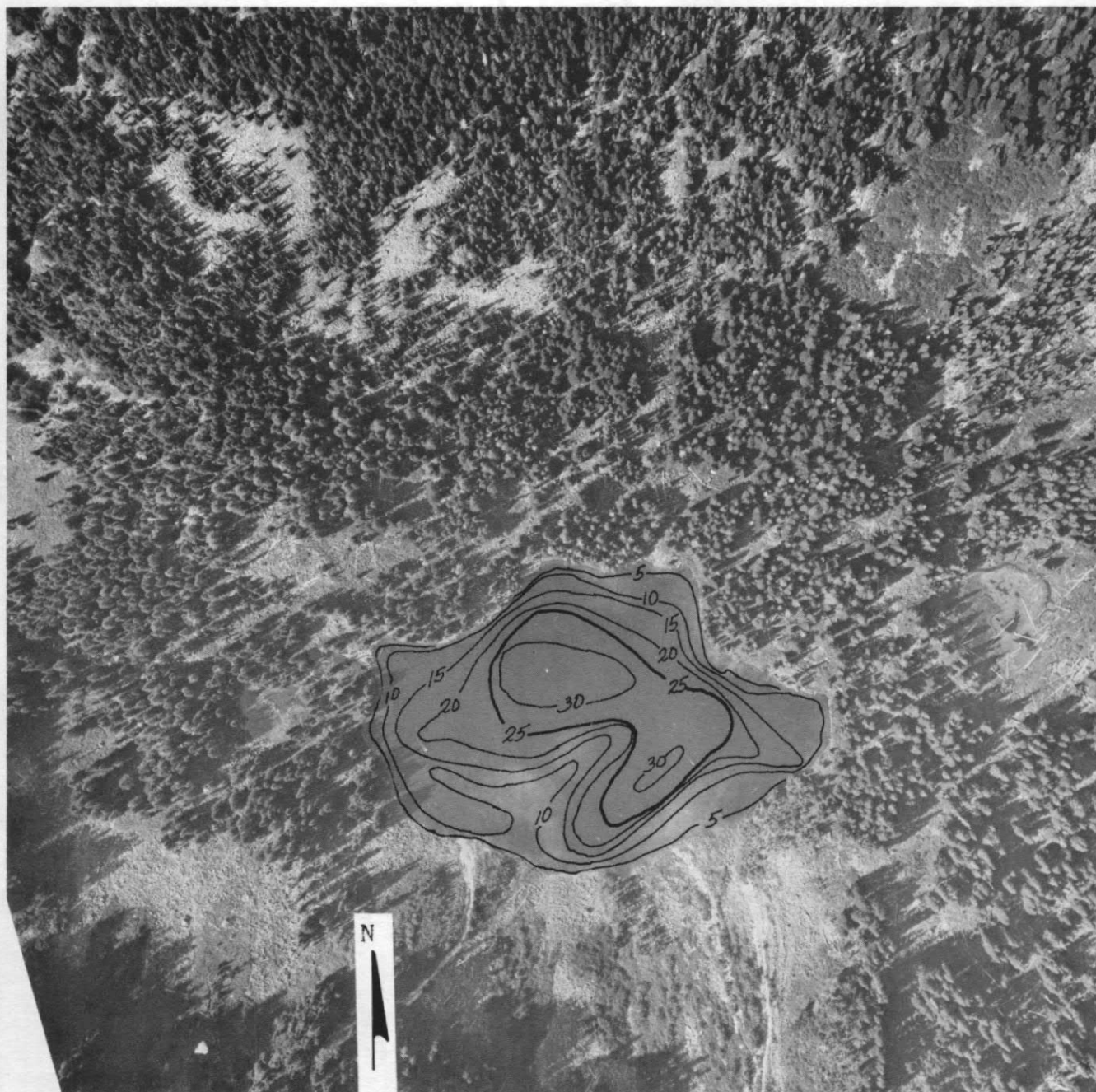
-----  
SAMPLE SITE 1  
DATE 8/15/73  
TIME 1830 1840  
DEPTH (FT) 3. 25.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.05  
TOTAL ORGANIC NITROGEN (N) 0.03 0.02  
TOTAL PHOSPHORUS (P) 0.001 0.002  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.000  
SPECIFIC CONDUCTANCE (MICROMHOS) 8 7  
WATER TEMPERATURE (DEG C) 14.0 11.0  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) >29  
DISSOLVED OXYGEN 9.3 10.0

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/15/73  
TIME 1900  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
NO AQUATIC PLANTS WERE OBSERVED.



0 500 1000 FEET

EXPLANATION

— 10 —

Line of equal  
water depth  
Interval 5 feet

Jug Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 26, 1973.  
Aerial photo, August 2, 1973.

## MCMURRAY LAKE

## SKAGIT COUNTY

LATITUDE 48°19'28" LONGITUDE 122°13'22" T33N-R5E-30  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 3.25 SQ MI  
ALTITUDE 158. FT  
LAKE AREA 160. ACRES  
LAKE VOLUME 4500. ACRE-FT  
MEAN DEPTH 29. FT  
MAXIMUM DEPTH 52. FT  
SHORELINE LENGTH 2.6 MI  
SHORELINE CONFIGURATION 1.5  
DEVELOPMENT OF VOLUME 0.56  
BOTTOM SLOPE 1.8 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 48 %  
NUMBER OF NEARSHORE HOMES 64  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 3 %  
AGRICULTURAL 11 %  
FOREST OR UNPRODUCTIVE 79 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

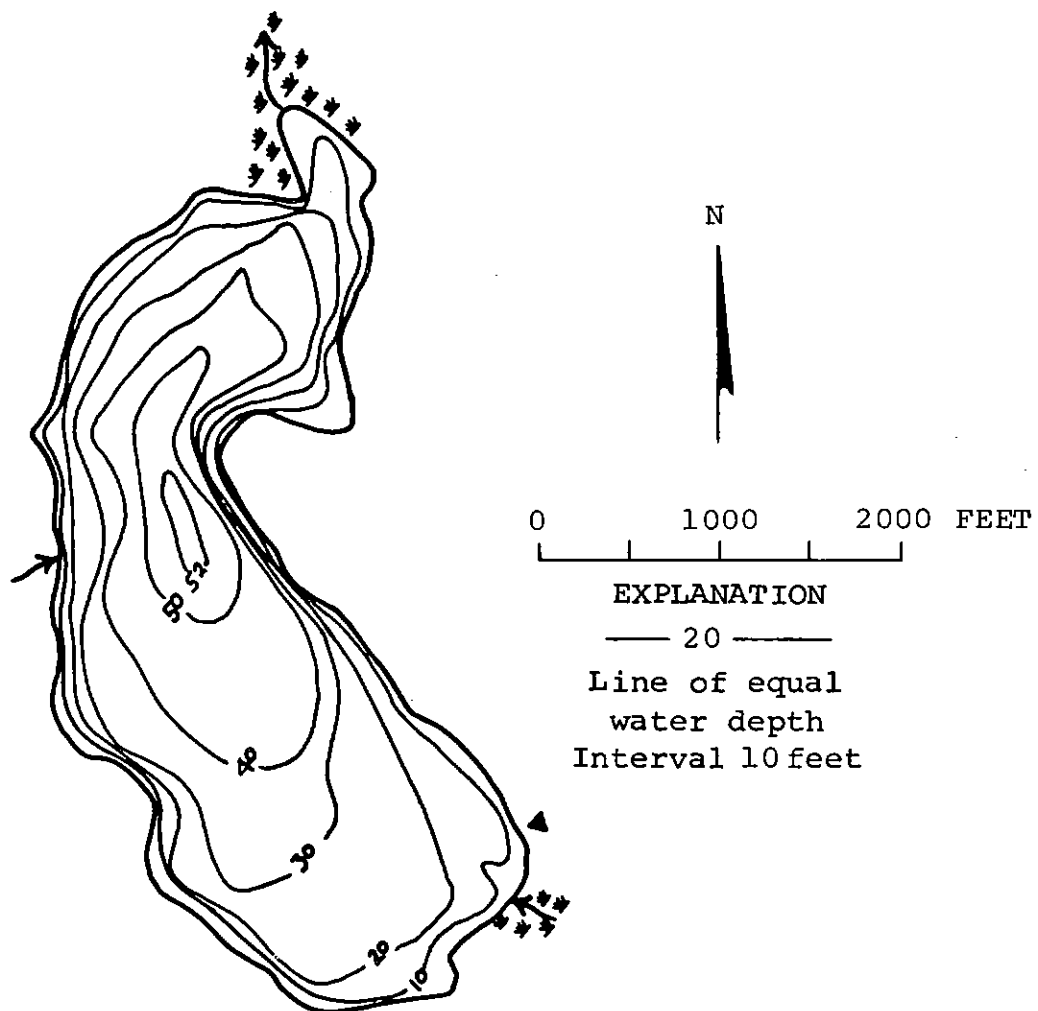
-----  
DATE 7/ 3/73  
TIME 1215 1220  
DEPTH (FT) 3. 43.  
TOTAL NITRATE (N) 0.42 0.14  
TOTAL NITRITE (N) 0.01 0.00  
TOTAL AMMONIA (N) 0.04 0.82  
TOTAL ORGANIC NITROGEN (N) 0.04 0.08  
TOTAL PHOSPHORUS (P) 0.017 0.17  
DISSOLVED ORTHOPHOSPHATE (P) 0.004 0.077  
SPECIFIC CONDUCTANCE (MICROMHOS) 84 110  
WATER TEMPERATURE (DEG C) 19.5 6.4  
COLOR (PLATINUM-COBALT UNITS) 0 15  
SECCHI-DISC VISIBILITY (FT) 14  
DISSOLVED OXYGEN 9.8 1.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 7/ 3/73  
TIME 1640  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) 1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 17  
FECAL COLIFORM, MEAN (COL./100ML) 9

## REMARKS

-----  
THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S.GEOLOGICAL SURVEY IN 1973.  
THE PLANT SURVEY WAS DONE ON AUGUST 24, 1973.



McMurray Lake, Skagit County. From Washington Department of Game, March 10, 1956.



McMurray Lake, Skagit County. June 2, 1970. Approx. scale 1:12,000.

## MINKLER LAKE

## SKAGIT COUNTY

LATITUDE 48°31'24" LONGITUDE 122° 6'11" T35N-R5E-15  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 5.61 SQ MI  
ALTITUDE 60. FT  
LAKE AREA 33. ACRES  
LAKE VOLUME 86. ACRE-FT  
MEAN DEPTH 3. FT  
MAXIMUM DEPTH 8. FT  
SHORELINE LENGTH 3.1 MI  
SHORELINE CONFIGURATION 3.9  
DEVELOPMENT OF VOLUME 0.33  
BOTTOM SLOPE 0.60 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 7 %  
NUMBER OF NEARSHORE HOMES 4  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 6 %  
FOREST OR UNPRODUCTIVE 93 %  
LAKE SURFACE 1 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 7/11/74  
TIME 1025 1030  
DEPTH (FT) 3. 7.  
TOTAL NITRATE (N) 0.00 --  
TOTAL NITRITE (N) 0.00 --  
TOTAL AMMONIA (N) 0.11 --  
TOTAL ORGANIC NITROGEN (N) 0.46 --  
TOTAL PHOSPHORUS (P) 0.021 --  
DISSOLVED ORTHOPHOSPHATE (P) 0.005 --  
SPECIFIC CONDUCTANCE (MICROMHOS) 68 --  
WATER TEMPERATURE (DEG C) 17.0 16.5  
COLOR (PLATINUM-COBALT UNITS) 60 --  
SECCHI-DISC VISIBILITY (FT) 5  
DISSOLVED OXYGEN 6.6 5.9

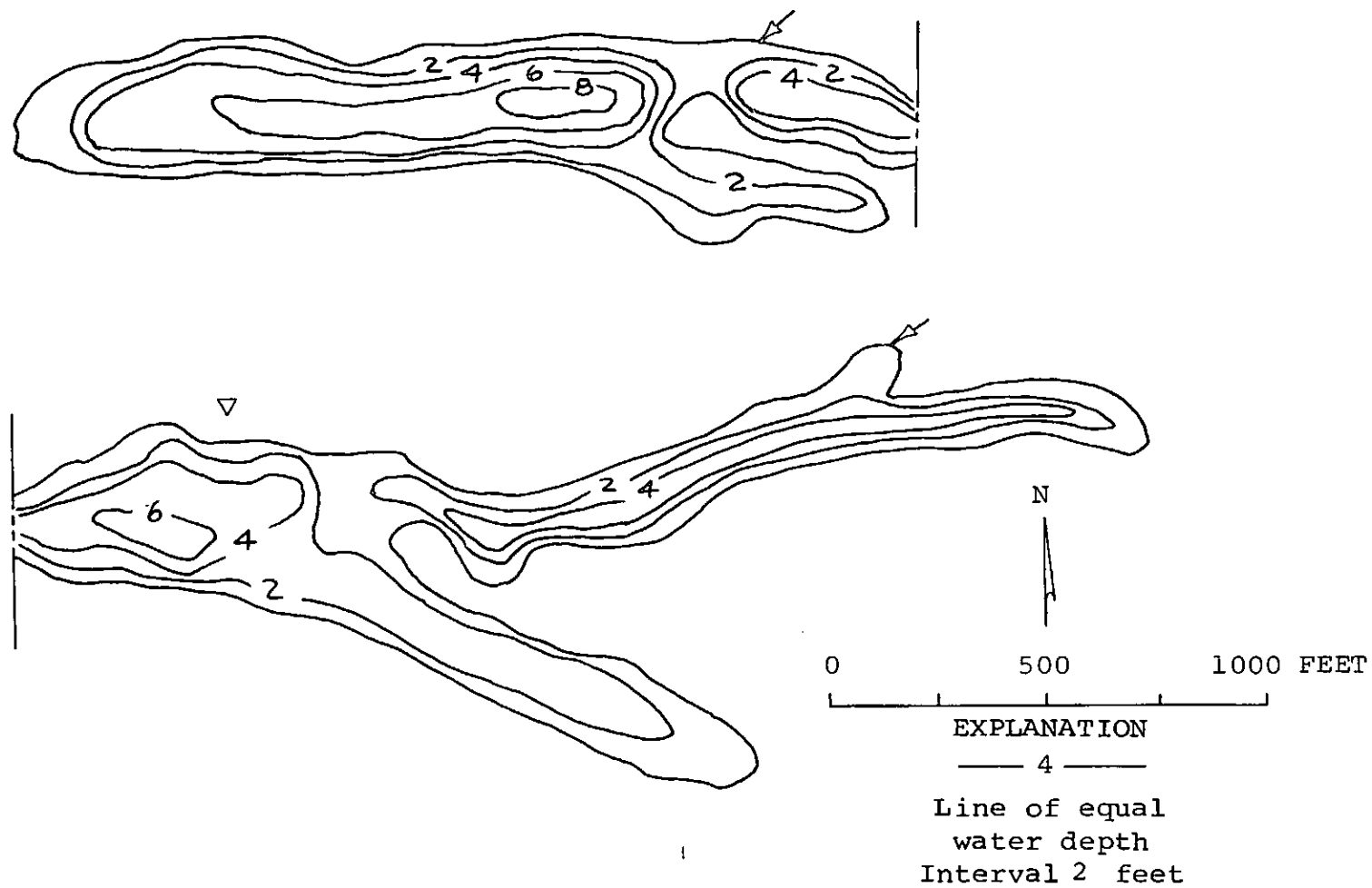
LAKE SHORELINE COVERED BY EMERSED PLANTS 51-75 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 11-25 %

DATE 7/11/74  
TIME 1710  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) 8  
FECAL COLIFORM, MAXIMUM (COL./100ML) 76  
FECAL COLIFORM, MEAN (COL./100ML) 42

## REMARKS

-----  
THE LAKE HAD A HEAVY GROWTH OF BOTH EMERSED AND SUBMERSED MACROPHYTES.  
THE LITTORAL BOTTOM IS MOSTLY MUCK. LOGS AND WOOD DEBRIS ARE SCATTERED  
IN THE LAKE. IN 1974 THE LAKE WAS SAMPLED FOUR TIMES BY THE U.S. GEOLOGI-  
CAL SURVEY. THE PLANT SURVEY WAS DONE ON AUGUST 15, 1974.





Minkler Lake, Skagit County. From U.S. Geological Survey, January 23, 1974.



Minkler Lake, Skagit County. July 20, 1974. Approx. scale 1:6000.

## MYRTLE LAKE

## SKAGIT COUNTY

LATITUDE 48°19'12" LONGITUDE 121°48'46" T33N-R8E-30  
 STILLAGUAMISH RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.12 SQ MI.  
 ALTITUDE 3560. FT  
 LAKE AREA 5. ACRES  
 LAKE VOLUME 51. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 22. FT  
 SHORELINE LENGTH 0.38 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.40  
 BOTTOM SLOPE 3.9 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 92 %  
 LAKE SURFACE 8 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

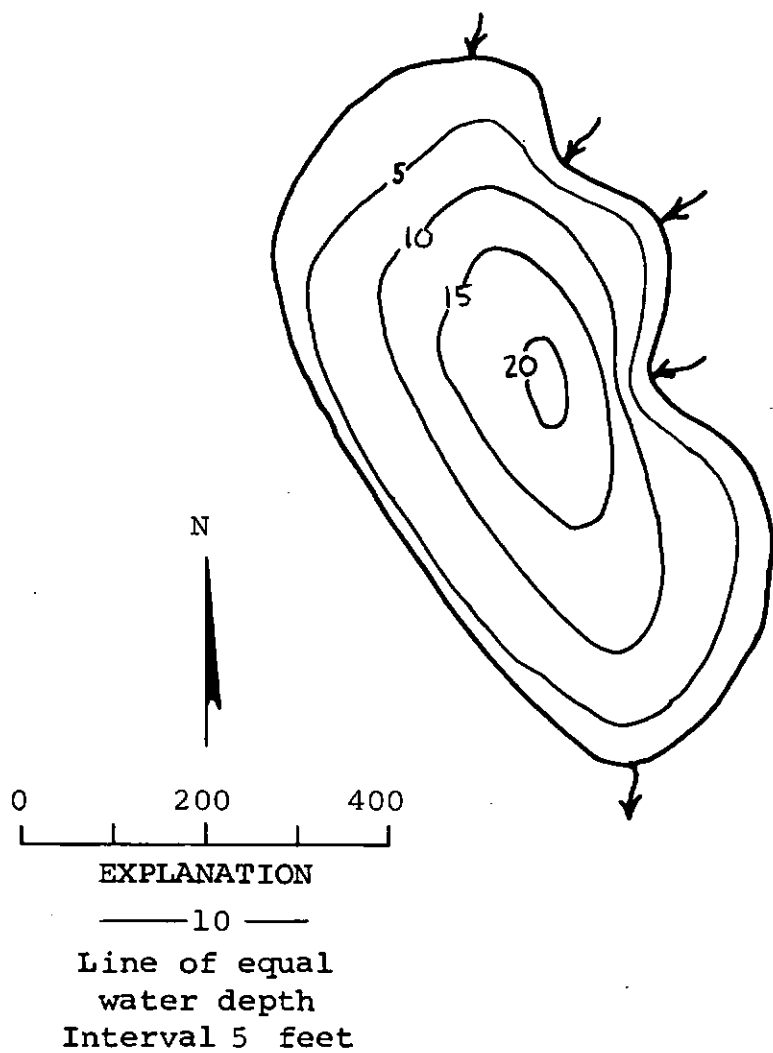
-----  
 SAMPLE SITE 1  
 DATE 8/13/73  
 TIME 1715 1725  
 DEPTH (FT) 3. 16.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.03 0.05  
 TOTAL ORGANIC NITROGEN (N) 0.10 0.13  
 TOTAL PHOSPHORUS (P) 0.016 0.014  
 TOTAL ORTHOPHOSPHATE (P) 0.009 0.004  
 SPECIFIC CONDUCTANCE (MICROMHOS) 40 42  
 WATER TEMPERATURE (DEG C) 20.1 11.0  
 COLOR (PLATINUM-COBALT UNITS) 10 10  
 SECCHI-DISC VISIBILITY (FT) 15  
 DISSOLVED OXYGEN 8.4 11.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

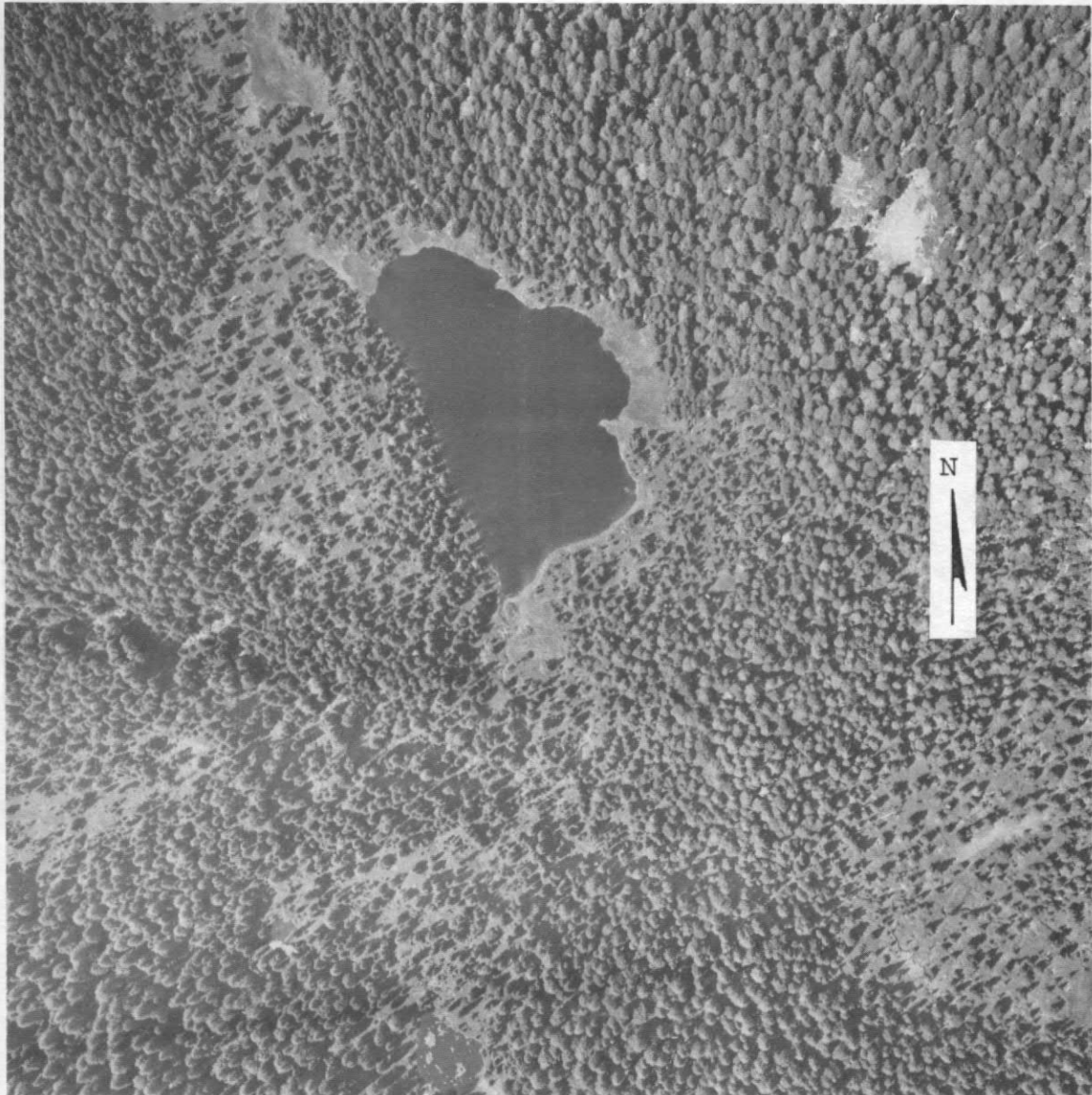
DATE 8/13/73  
 TIME 1700  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE HAD A THIN SCATTERED BAND OF EMERSED PLANTS NEAR THE SHORELINE.



Myrtle Lake, Skagit County. From Washington Department of Game, August 18, 1955.



Myrtle Lake, Skagit County. July 15, 1973. Approx. scale 1:4800.

## PASS LAKE

## SKAGIT COUNTY

LATITUDE 48°25' 1" LONGITUDE 122°38'30" T34N-R1E-23  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.61 SQ MI  
 ALTITUDE 130. FT  
 LAKE AREA 98. ACRES  
 LAKE VOLUME 1500. ACRE-FT  
 MEAN DEPTH 15. FT  
 MAXIMUM DEPTH 20. FT  
 SHORELINE LENGTH 1.9 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.77  
 BOTTOM SLOPE 0.86 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 4 %  
 NUMBER OF NEARSHORE HOMES 2  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 9 %  
 FOREST OR UNPRODUCTIVE 66 %  
 LAKE SURFACE 25 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 1  
 8/21/73  
 TIME 1115 1120  
 DEPTH (FT) 3. 13.  
 TOTAL NITRATE (N) 0.04 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.13 0.17  
 TOTAL ORGANIC NITROGEN (N) 1.2 0.83  
 TOTAL PHOSPHORUS (P) 0.075 0.065  
 DISSOLVED ORTHOPHOSPHATE (P) 0.004 0.020  
 SPECIFIC CONDUCTANCE (MICROMHOS) 280 290  
 WATER TEMPERATURE (DEG C) 18.2 17.8  
 COLOR (PLATINUM-COBALT UNITS) 25 10  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 13.6 10.0

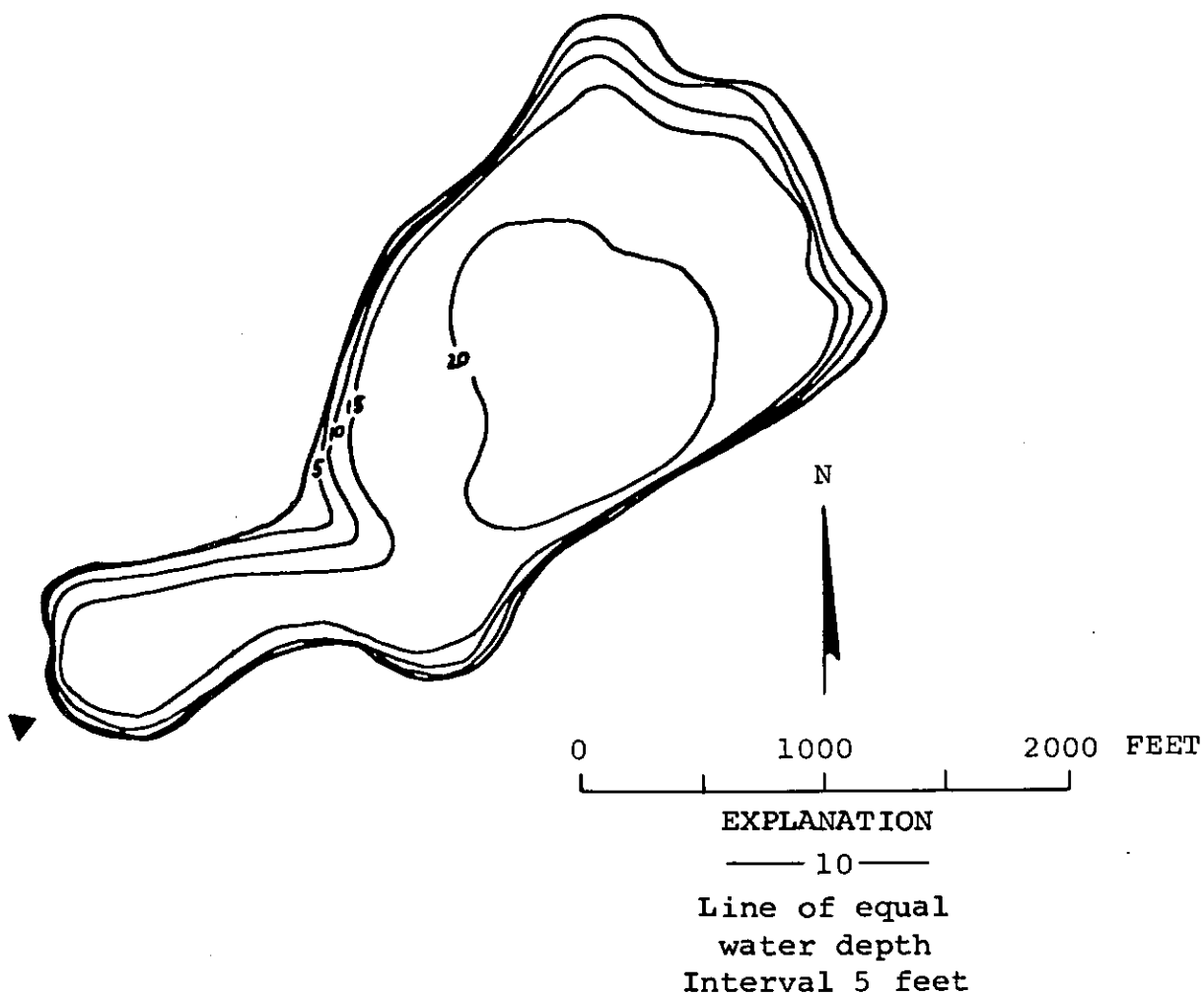
LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/21/73  
 TIME 1120  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

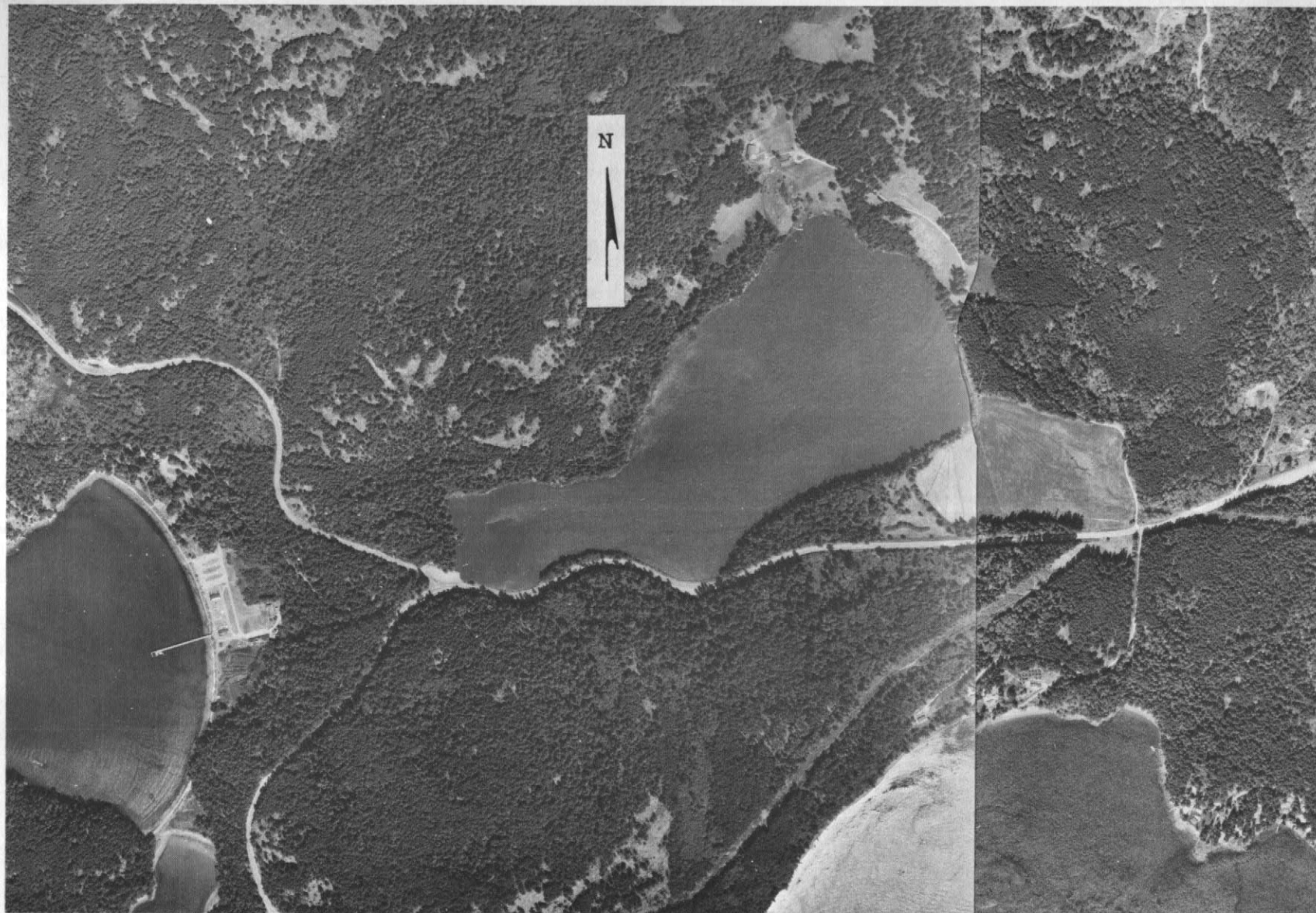
## REMARKS

-----  
 A "PEA SOUP" COLOR ALGAL BLOOM WAS OBSERVED. THE WEST END OF THE LAKE  
 IS IN DECEPTION PASS STATE PARK.





Pass Lake, Skagit County. From Washington Department of Game, June 19, 1946.



Pass Lake, Skagit County. July 21, 1969. Approx. scale 1:12,000.

## SAUK LAKE

## SKAGIT COUNTY

LATITUDE 48°31'27" LONGITUDE 121°35'14" T35N-R9E-13  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.35 SQ MI  
ALTITUDE 4025. FT  
LAKE AREA 10. ACRES  
LAKE VOLUME 100. ACRE-FT  
MEAN DEPTH 10. FT  
MAXIMUM DEPTH 20. FT  
SHORELINE LENGTH 0.59 MI  
SHORELINE CONFIGURATION 1.3  
DEVELOPMENT OF VOLUME 0.52  
BOTTOM SLOPE 2.7 %  
BASIN GEOLOGY IGNEOUS  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 96 %  
LAKE SURFACE 4 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

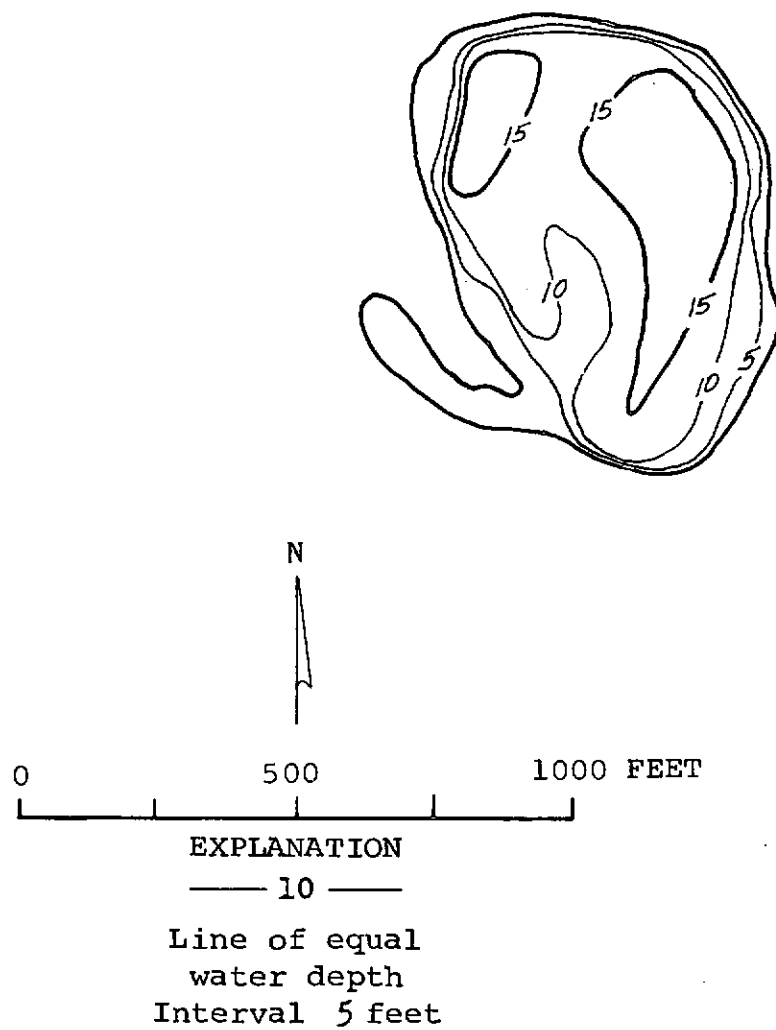
-----  
SAMPLE SITE 1  
DATE 8/20/73  
TIME 1030 1035  
DEPTH (FT) 3. 14.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.01 0.02  
TOTAL ORGANIC NITROGEN (N) 0.09 0.12  
TOTAL PHOSPHORUS (P) 0.005 0.004  
TOTAL ORTHOPHOSPHATE (P) 0.004 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 76 78  
WATER TEMPERATURE (DEG C) -- --  
COLOR (PLATINUM-COBALT UNITS) 5 5  
SECCHI-DISC VISIBILITY (FT) >18  
DISSOLVED OXYGEN -- --

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/20/73  
TIME 1040  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW AQUATIC PLANTS WERE OBSERVED.



Sauk Lake, Skagit County. From U.S. Geological Survey, October 26, 1973.



Sauk Lake, Skagit County. August 12, 1972. Approx. scale 1:4800.

## SHANNON LAKE

## SKAGIT COUNTY

LATITUDE 48°32'53" LONGITUDE 121°44'22" T35N-R8E-2  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 297. SQ MI  
ALTITUDE 438. FT  
LAKE AREA 2300. ACRES  
LAKE VOLUME 210000. ACRE-FT  
MEAN DEPTH 93. FT  
MAXIMUM DEPTH 260. FT  
SHORELINE LENGTH 22. MI  
SHORELINE CONFIGURATION 3.3  
DEVELOPMENT OF VOLUME 0.36  
BOTTOM SLOPE 2.3 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 97 %  
LAKE SURFACE 3 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

	1		2	
	8/ 6/74		8/ 6/74	
DATE	8/ 6/74	8/ 6/74	8/ 6/74	8/ 6/74
TIME	1400	1405	1500	1505
DEPTH (FT)	3.	52.	3.	148.
TOTAL NITRATE (N)	0.01	0.03	0.07	0.05
TOTAL NITRITE (N)	0.00	0.00	0.00	0.00
TOTAL AMMONIA (N)	0.03	0.03	0.09	0.03
TOTAL ORGANIC NITROGEN (N)	0.20	0.07	0.06	0.00
TOTAL PHOSPHORUS (P)	0.010	0.037	0.007	0.012
TOTAL ORTHOPHOSPHATE (P)	0.005	0.006	0.003	0.007
SPECIFIC CONDUCTANCE (MICROMHOS)	35	35	35	35
WATER TEMPERATURE (DEG C)	17.0	10.4	17.9	9.1
COLOR (PLATINUM-COBALT UNITS)	0	0	0	0
SECCHI-DISC VISIBILITY (FT)	6	6	6	6
DISSOLVED OXYGEN	9.7	10.5	9.6	10.2

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

DATE

8/ 6/74

TIME

1315

NUMBER OF FECAL COLIFORM SAMPLES

5

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

1

FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
A HYDROPOWER RESERVOIR ON THE BAKER RIVER. AQUATIC PLANTS ARE SCARCE WITH THE EXCEPTION OF A FEW EMERSED PLANTS IN BAY AREAS. BRUSH AND TREES OVERHANG WATER ALONG MOST OF SHORELINE. MANY LOGS AND SNAGS ARE IN THE LAKE. THE DO CONCENTRATION WAS NEAR SATURATION THROUGHOUT THE ENTIRE WATER COLUMN.





Shannon Lake, Skagit County. October 14, 1971. Approx. scale 1:63,000.

## SIXTEEN LAKE

## SKAGIT COUNTY

LATITUDE 48°20'32" LONGITUDE 122°17'17" T33N-R4E-15  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 1.47 SQ MI  
ALTITUDE 427. FT  
LAKE AREA 46. ACRES  
LAKE VOLUME 840. ACRE-FT  
MEAN DEPTH 18. FT  
MAXIMUM DEPTH 27. FT  
SHORELINE LENGTH 1.2 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.68  
BOTTOM SLOPE 1.7 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 21 %  
NUMBER OF NEARSHORE HOMES 11  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL <1 %  
FOREST OR UNPRODUCTIVE 95 %  
LAKE SURFACE 5 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

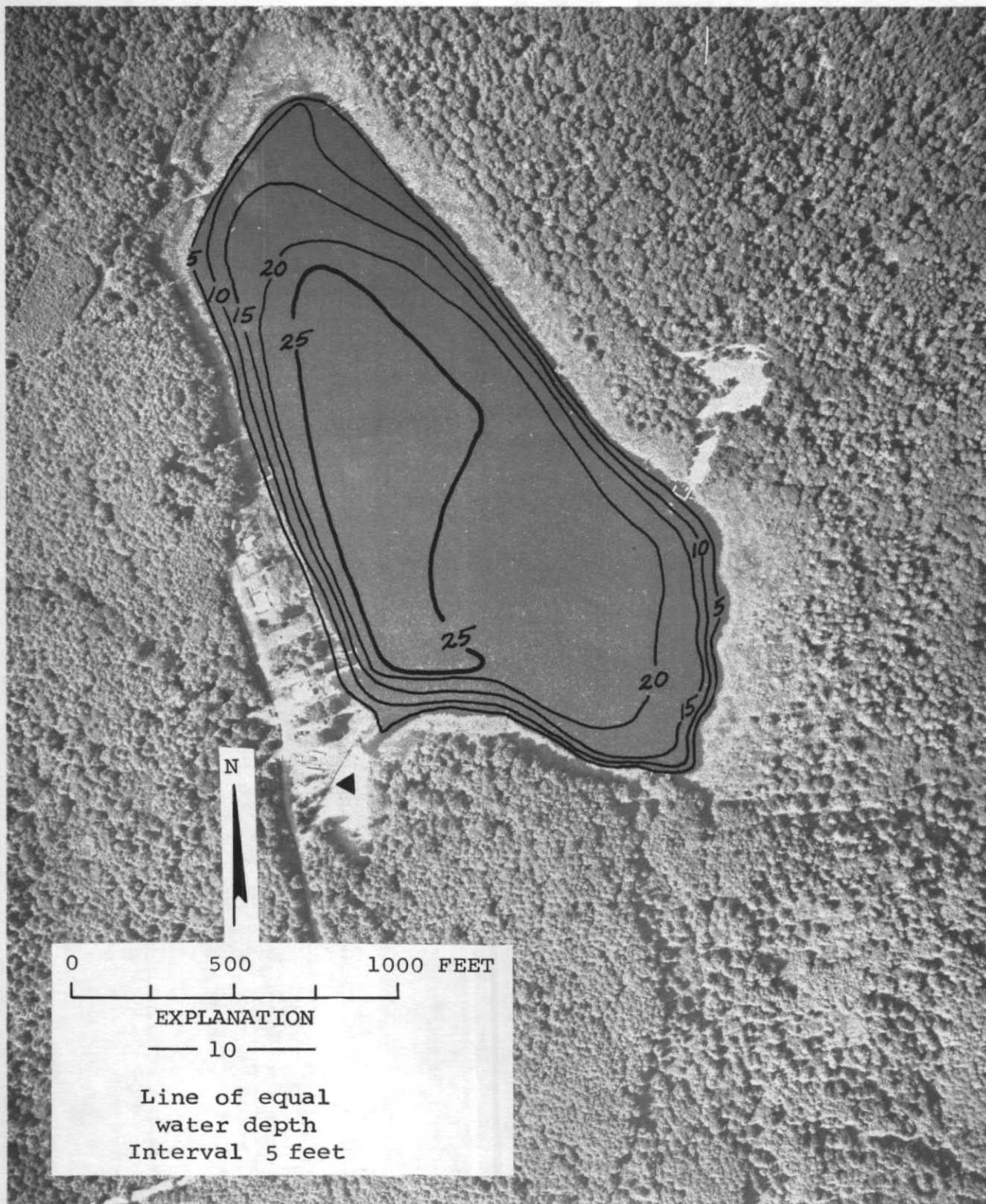
-----  
SAMPLE SITE 1  
DATE 8/21/73  
TIME 1735 1740  
DEPTH (FT) 3. 19.  
TOTAL NITRATE (N) 0.21 0.28  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.07 0.20  
TOTAL ORGANIC NITROGEN (N) 0.28 0.48  
TOTAL PHOSPHORUS (P) 0.018 0.071  
TOTAL ORTHOPHOSPHATE (P) 0.004 0.003  
SPECIFIC CONDUCTANCE (MICROMHOS) 92 99  
WATER TEMPERATURE (DEG C) 20.0 9.8  
COLOR (PLATINUM-COBALT UNITS) 15 35  
SECCHI-DISC VISIBILITY (FT) 12  
DISSOLVED OXYGEN 8.8 0.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/21/73  
TIME 1740  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) 1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 33  
FECAL COLIFORM, MEAN (COL./100ML) 17

## REMARKS

-----  
EMERSED PLANTS COVERED MOST OF THE SHORELINE. A HEAVY COVER OF SUBMERSED PLANTS (MOSTLY CHARA) WAS ALSO OBSERVED. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Sixteen Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, October 20, 1973.  
Aerial photo, July 15, 1973.

## SPRINGSTEEN LAKE

## SKAGIT COUNTY

LATITUDE 48°37'19" LONGITUDE 121°50'40" T36N-R7E12  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.16 SQ MI  
 ALTITUDE 3550. FT  
 LAKE AREA 13. ACRES  
 LAKE VOLUME 110. ACRE-FT  
 MEAN DEPTH 9. FT  
 MAXIMUM DEPTH 16. FT  
 SHORELINE LENGTH 0.73 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.55  
 BOTTOM SLOPE 1.9 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 87 %  
 LAKE SURFACE 13 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/17/73  
 TIME 1530 1535  
 DEPTH (FT) 3. 8.  
 TOTAL NITRATE (N) 0.02 --  
 TOTAL NITRITE (N) 0.00 --  
 TOTAL AMMONIA (N) 0.02 --  
 TOTAL ORGANIC NITROGEN (N) 0.11 --  
 TOTAL PHOSPHORUS (P) 0.005 --  
 TOTAL ORTHOPHOSPHATE (P) 0.001 --  
 SPECIFIC CONDUCTANCE (MICROMHOS) 72 --  
 WATER TEMPERATURE (DEG C) 17.0 17.0  
 COLOR (PLATINUM-COBALT UNITS) 5 --  
 SECCHI-DISC VISIBILITY (FT) >12  
 DISSOLVED OXYGEN 8.8 8.6

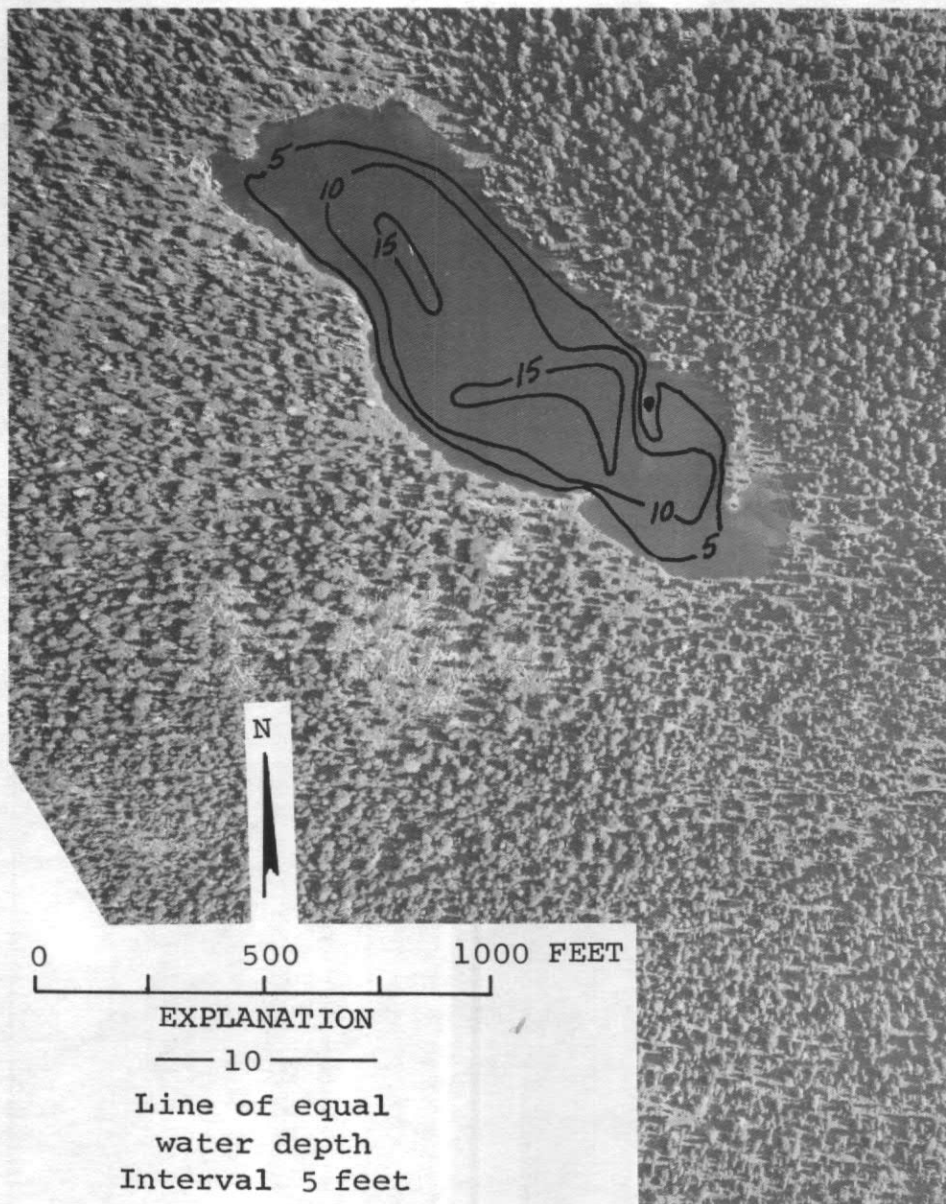
LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/17/73  
 TIME 1600  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 LOGS OCCUR LOCALLY ALONG THE SHORELINE.





Springsteen Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, October 28, 1973.  
Aerial photo, July 15, 1973.

## TEN LAKE

## SKAGIT COUNTY

LATITUDE 48°22' 9" LONGITUDE 122°16'52" T33N-R4E-10  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.17 SQ MI  
ALTITUDE 1210. FT  
LAKE AREA 13. ACRES  
LAKE VOLUME 420. ACRE-FT  
MEAN DEPTH 32. FT  
MAXIMUM DEPTH 72. FT  
SHORELINE LENGTH 0.72 MI  
SHORELINE CONFIGURATION 1.4  
DEVELOPMENT OF VOLUME 0.45  
BOTTOM SLOPE 8.5 %  
BASIN GEOLOGY SED./META.  
INFLOW NOT DETERMINED  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 88 %  
LAKE SURFACE 12 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
DATE 1  
8/21/73  
TIME 1555 1600  
DEPTH (FT) 3. 39.  
TOTAL NITRATE (N) 0.02 0.03  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.50  
TOTAL ORGANIC NITROGEN (N) 0.20 0.32  
TOTAL PHOSPHORUS (P) 0.009 0.11  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.087  
SPECIFIC CONDUCTANCE (MICROMHOS) 160 160  
WATER TEMPERATURE (DEG C) 18.1 6.0  
COLOR (PLATINUM-COBALT UNITS) 5 35  
SECCHI-DISC VISIBILITY (FT) 23  
DISSOLVED OXYGEN 8.9 0.0

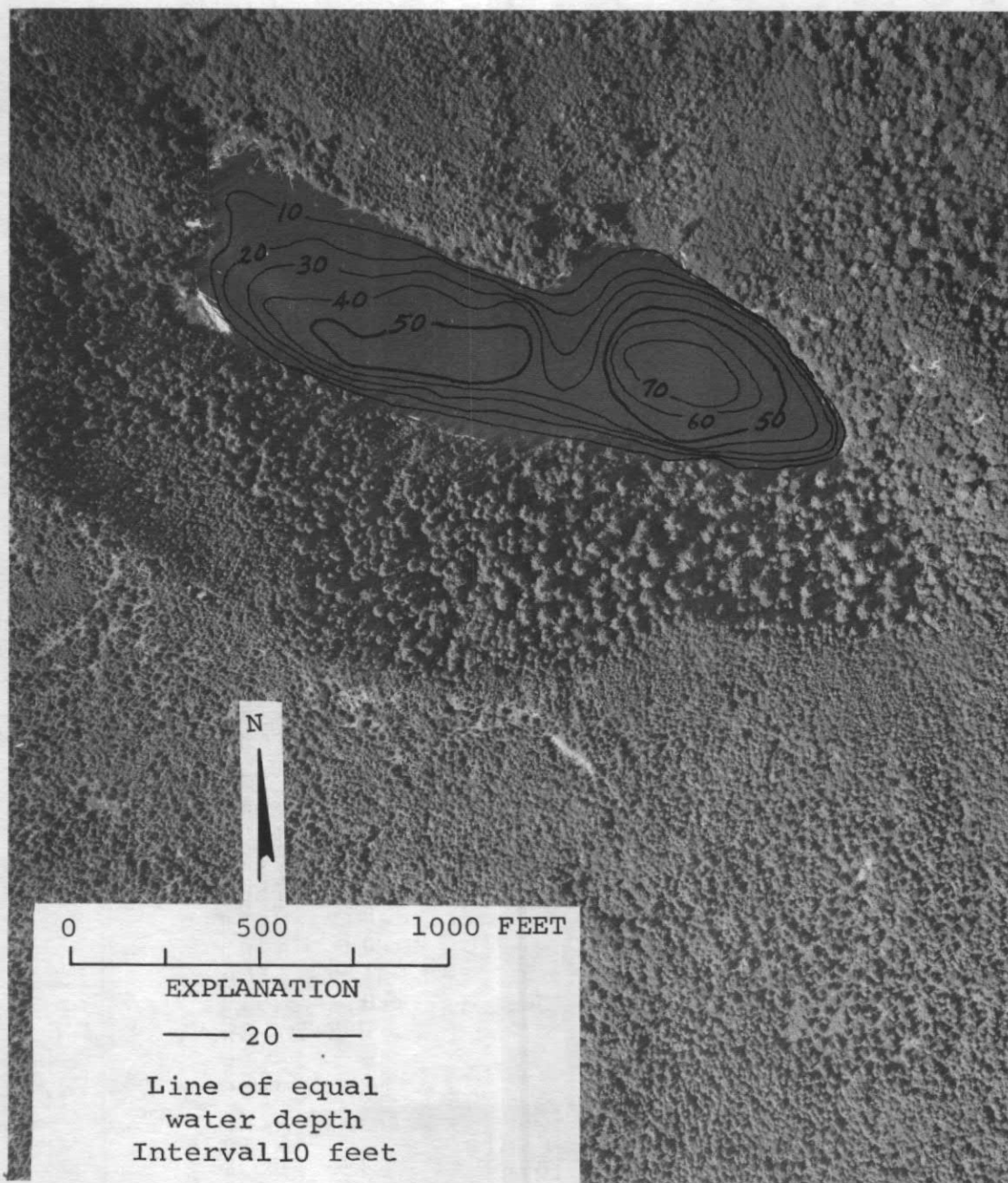
LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/21/73  
TIME 1600  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
LOGS OCCUR LOCALLY ALONG THE SHORELINE. A STRONG HYDROGEN-SULFIDE ODOR  
WAS DETECTED IN THE HYPOLIMNION.





Ten Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 29, 1973.  
Aerial photo, July 5, 1973.

WHALE LAKE

SKAGIT COUNTY

LATITUDE 48°26'56" LONGITUDE 121°17' 8" T34N-R12E-7  
SKAGIT RIVER BASIN

PHYSICAL DATA

-----  
DRAINAGE AREA 0.74 SQ MI  
ALTITUDE 4555. FT  
LAKE AREA 44. ACRES  
LAKE VOLUME 4300. ACRE-FT  
MEAN DEPTH 99. FT  
MAXIMUM DEPTH 240. FT  
SHORELINE LENGTH 1.4 MI  
SHORELINE CONFIGURATION 1.5  
DEVELOPMENT OF VOLUME 0.41  
BOTTOM SLOPE 16. %  
BASIN GEOLOGY IGNEOUS  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 91 %  
LAKE SURFACE 9 %  
PUBLIC BOAT ACCESS TO LAKE --

WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/15/73  
TIME 1300 1310  
DEPTH (FT) 3. 141.  
TOTAL NITRATE (N) 0.01 0.05  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.03 0.03  
TOTAL ORGANIC NITROGEN (N) 0.03 0.02  
TOTAL PHOSPHORUS (P) 0.004 0.005  
TOTAL ORTHOPHOSPHATE (P) 0.001 0.001  
SPECIFIC CONDUCTANCE (MICROMHOS) 11 61  
WATER TEMPERATURE (DEG C) 16.1 3.8  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 46  
DISSOLVED OXYGEN 7.8 1.4

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/15/73  
TIME 1200  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

REMARKS

-----  
NO AQUATIC PLANTS WERE OBSERVED.



Whale Lake, Skagit County. Bathymetric map from  
U.S. Geological Survey, September 26, 1973.  
Aerial photo, August 2, 1973.

WHATCOM  
COUNTY



## BLUE LAKE

## WHATCOM COUNTY

LATITUDE 48°38'45" LONGITUDE 121°47'22" T37N-R8E-32  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.17 SQ MI  
ALTITUDE 3950. FT  
LAKE AREA 11. ACRES  
LAKE VOLUME 470. ACRE-FT  
MEAN DEPTH 41. FT  
MAXIMUM DEPTH 77. FT  
SHORELINE LENGTH 0.55 MI  
SHORELINE CONFIGURATION 1.2  
DEVELOPMENT OF VOLUME 0.53  
BOTTOM SLOPE 9.7 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 90 %  
LAKE SURFACE 10 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/17/73  
TIME 1700 1710  
DEPTH (FT) 3. 56.  
TOTAL NITRATE (N) 0.03 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.01  
TOTAL ORGANIC NITROGEN (N) 0.02 0.03  
TOTAL PHOSPHORUS (P) 0.003 0.001  
TOTAL ORTHOPHOSPHATE (P) 0.000 0.001  
SPECIFIC CONDUCTANCE (MICROMHOS) 55 81  
WATER TEMPERATURE (DEG C) 11.5 4.5  
COLOR (PLATINUM-COBALT UNITS) 0 0  
SECCHI-DISC VISIBILITY (FT) 30  
DISSOLVED OXYGEN 9.8 8.4

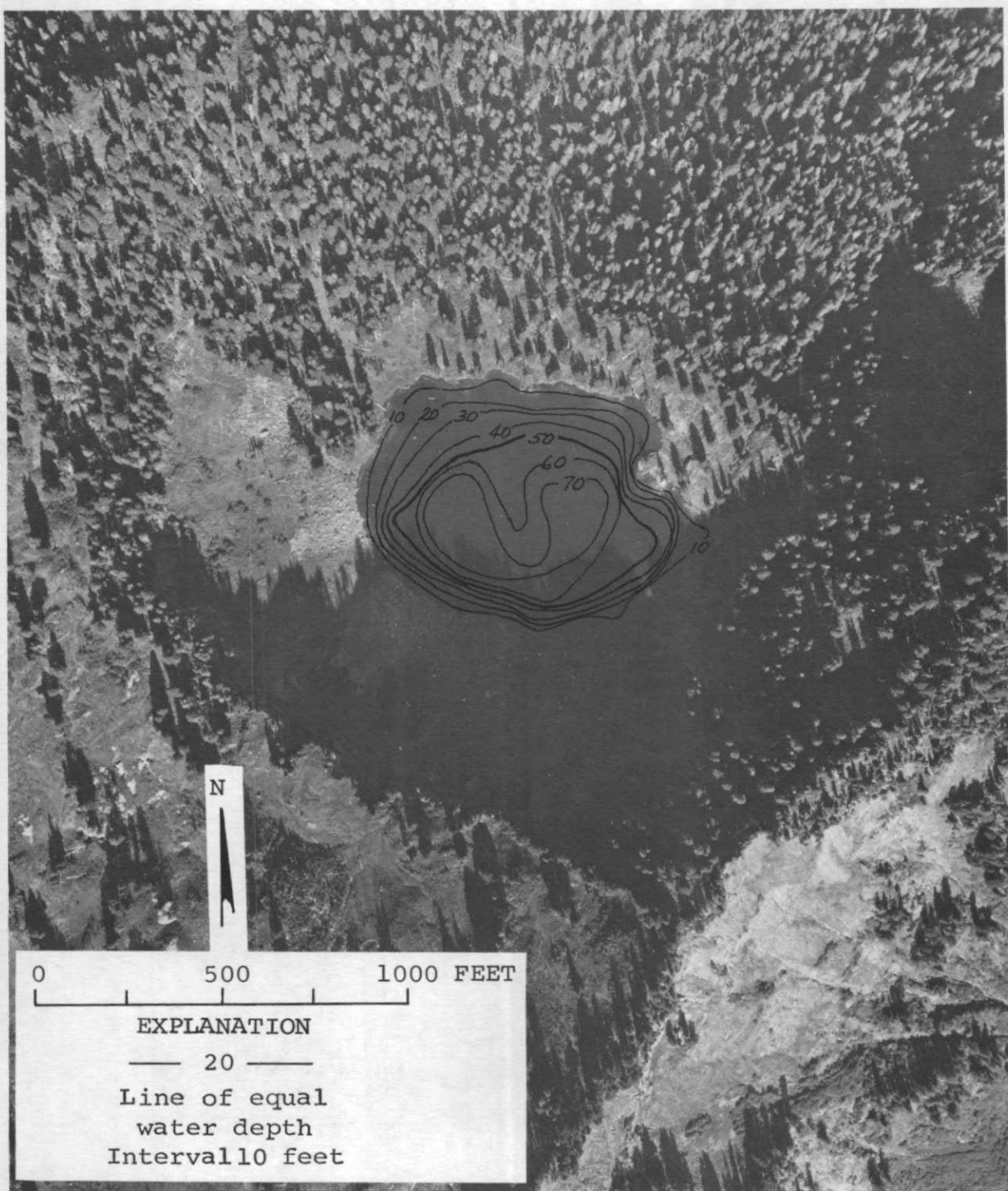
LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/17/73  
TIME 1715  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW AQUATIC PLANTS WERE OBSERVED.





Blue Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 30, 1973.  
Aerial photo, September 27, 1973.

## CAIN LAKE

## WHATCOM COUNTY

LATITUDE 48°38'45" LONGITUDE 122°19'42" T37N-R4E-32  
SAMISH RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 3.32 SQ MI  
ALTITUDE 391. FT  
LAKE AREA 72. ACRES  
LAKE VOLUME 2200. ACRE-FT  
MEAN DEPTH 30. FT  
MAXIMUM DEPTH 62. FT  
SHORELINE LENGTH 1.7 MI  
SHORELINE CONFIGURATION 1.4  
DEVELOPMENT OF VOLUME 0.49  
BOTTOM SLOPE 3.1 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 73 %  
NUMBER OF NEARSHORE HOMES 46  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 4 %  
AGRICULTURAL 3 %  
FOREST OR UNPRODUCTIVE 90 %  
LAKE SURFACE 3 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

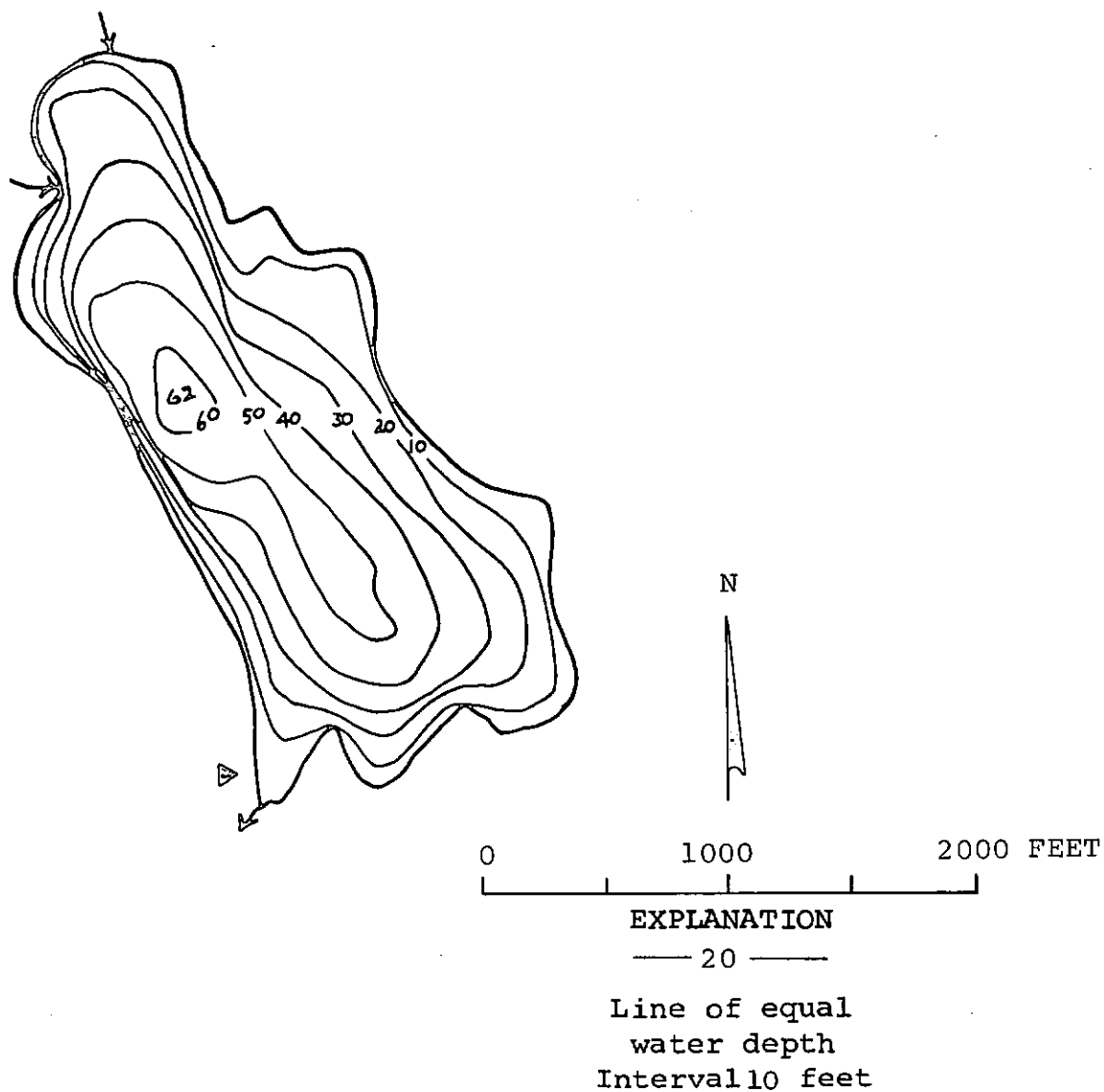
-----  
DATE 1  
8/22/73  
TIME 1745 1750  
DEPTH (FT) 3. 46.  
TOTAL NITRATE (N) 0.48 0.45  
TOTAL NITRITE (N) 0.01 0.00  
TOTAL AMMONIA (N) 0.07 0.21  
TOTAL ORGANIC NITROGEN (N) 0.29 0.12  
TOTAL PHOSPHORUS (P) 0.014 0.021  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 49 51  
WATER TEMPERATURE (DEG C) 19.3 5.9  
COLOR (PLATINUM-COBALT UNITS) 5 25  
SECCHI-DISC VISIBILITY (FT) 10  
DISSOLVED OXYGEN 9.5 0.5

LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/22/73  
TIME 1810  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 4  
FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
AN ALGAL BLOOM WAS OBSERVED.



Cain Lake, Whatcom County. From Washington Department of Game, February 26, 1946.



Cain Lake, Whatcom County. September 27, 1973. Approx. scale 1:4800.

## CANYON LAKE

## WHATCOM COUNTY

LATITUDE 48°50' 8" LONGITUDE 122° 4'19" T39N-R6E-30  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 3.95 SQ MI  
 ALTITUDE 2250. FT  
 LAKE AREA 37. ACRES  
 LAKE VOLUME 930. ACRE-FT  
 MEAN DEPTH 25. FT  
 MAXIMUM DEPTH 66. FT  
 SHORELINE LENGTH 1.3 MI  
 SHORELINE CONFIGURATION 1.5  
 DEVELOPMENT OF VOLUME 0.38  
 BOTTOM SLOPE 4.6 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 99 %  
 LAKE SURFACE 1 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 1  
 DATE 8/22/73  
 TIME 1350 1355  
 DEPTH (FT) 3. 27.  
 TOTAL NITRATE (N) 0.02 0.14  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.05 0.07  
 TOTAL ORGANIC NITROGEN (N) 0.15 0.13  
 TOTAL PHOSPHORUS (P) 0.007 0.016  
 TOTAL ORTHOPHOSPHATE (P) 0.002 0.002  
 SPECIFIC CONDUCTANCE (MICROMHOS) 25 26  
 WATER TEMPERATURE (DEG C) 15.3 5.1  
 COLOR (PLATINUM-COBALT UNITS) 10 20  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 8.3 5.2

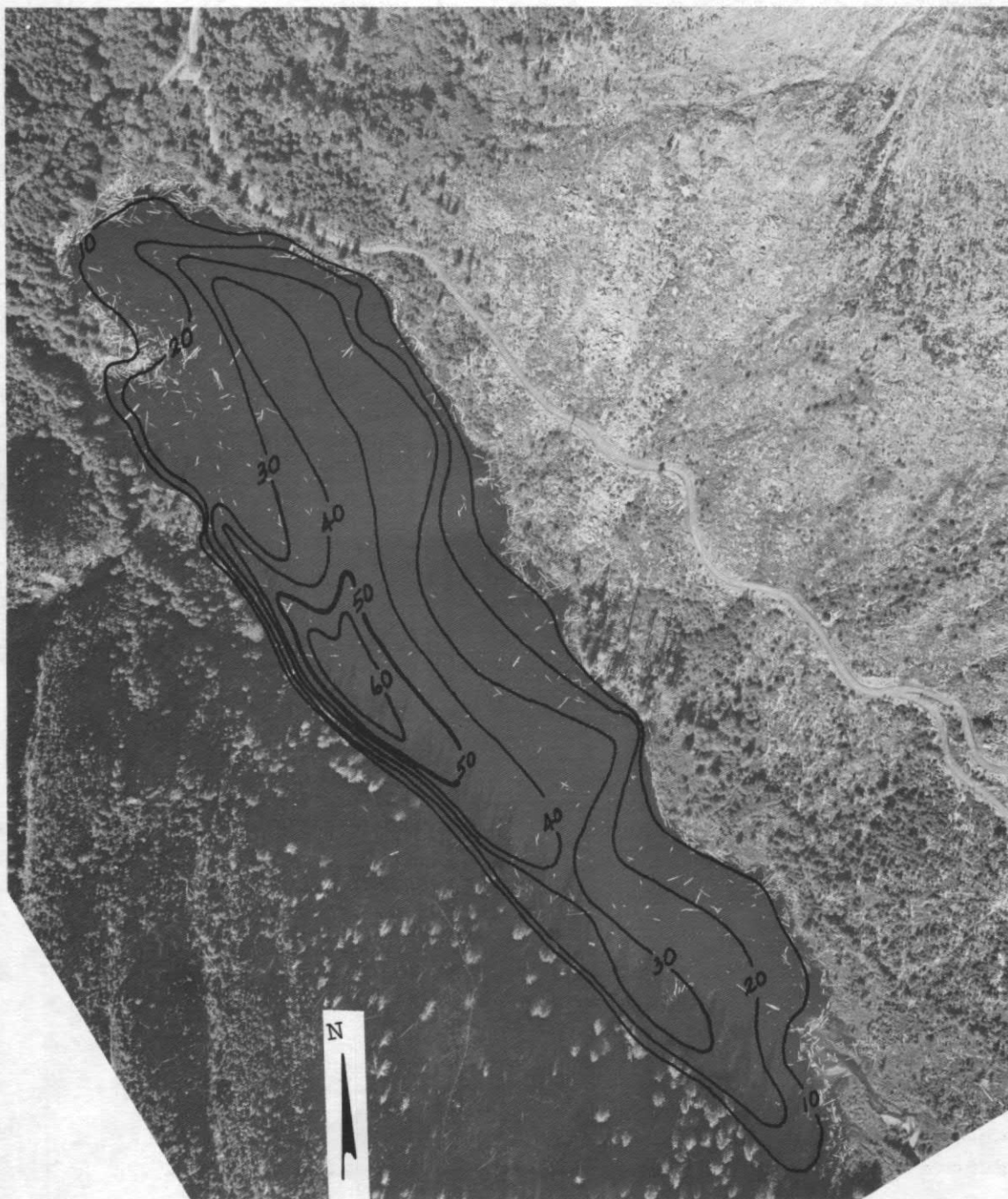
LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/22/73  
 TIME 1355  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE IS HEAVILY COVERED WITH LOGS AND WOOD DEBRIS.





0 500 1000 FEET

EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 10 feet

Canyon Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 11, 1973.  
Aerial photo, September 27, 1973.



## FAZON LAKE

## WHATCOM COUNTY

LATITUDE 48°51'52" LONGITUDE 122°22' 4" T39N-R3E-13  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.97 SQ MI  
 ALTITUDE 128. FT  
 LAKE AREA 31. ACRES  
 LAKE VOLUME 300. ACRE-FT  
 MEAN DEPTH 10. FT  
 MAXIMUM DEPTH 17. FT  
 SHORELINE LENGTH 0.89 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.57  
 BOTTOM SLOPE 1.3 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 55 %  
 FOREST OR UNPRODUCTIVE 40 %  
 LAKE SURFACE 5 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

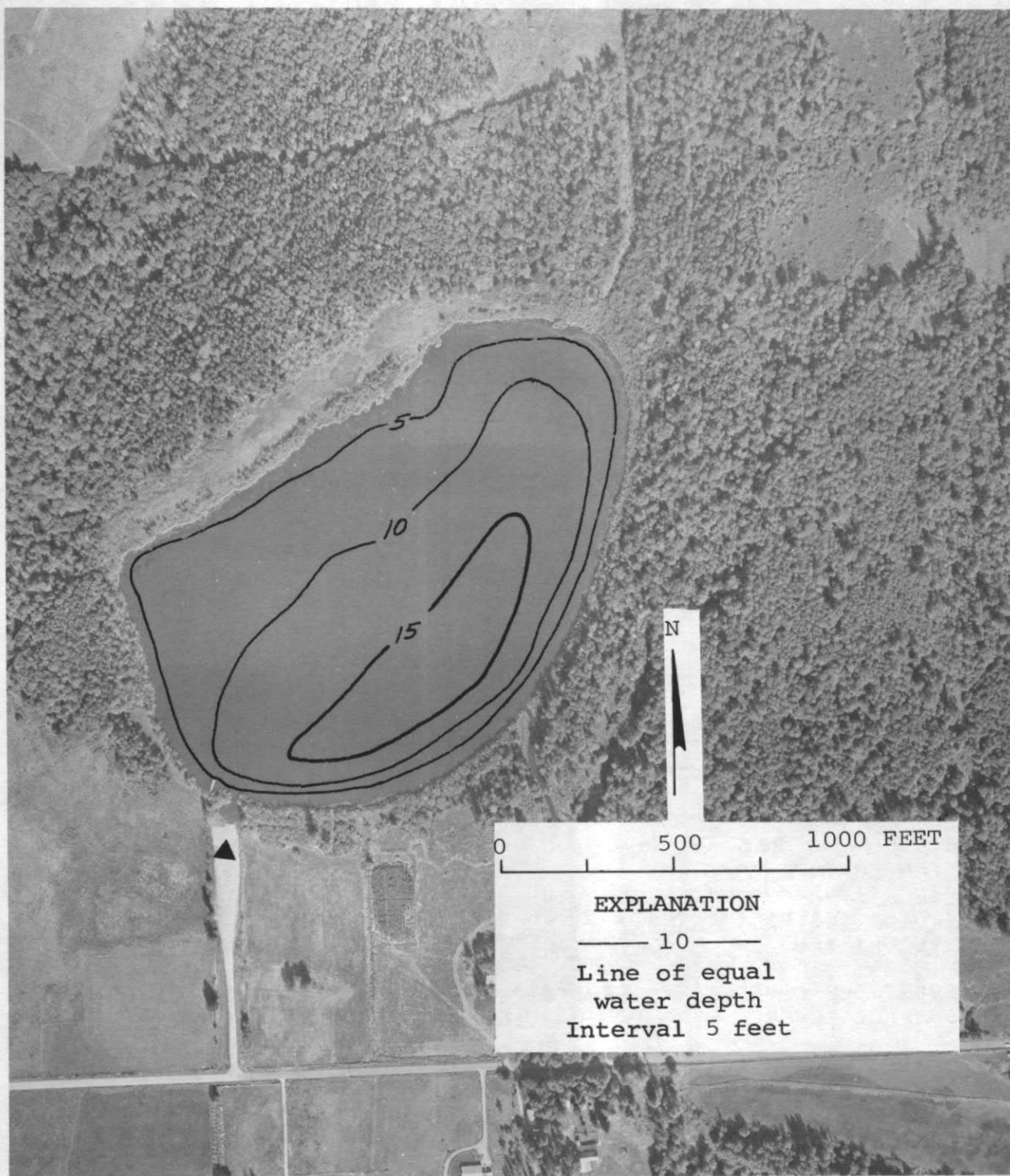
-----  
 SAMPLE SITE 1  
 DATE 8/23/73  
 TIME 1310 1315  
 DEPTH (FT) 3. 10.  
 TOTAL NITRATE (N) 0.03 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.18 0.32  
 TOTAL ORGANIC NITROGEN (N) 0.71 0.68  
 TOTAL PHOSPHORUS (P) 0.085 0.14  
 TOTAL ORTHOPHOSPHATE (P) 0.015 0.025  
 SPECIFIC CONDUCTANCE (MICROMHOS) 610 620  
 WATER TEMPERATURE (DEG C) 19.0 18.0  
 COLOR (PLATINUM-COBALT UNITS) 50 65  
 SECCHI-DISC VISIBILITY (FT) 5  
 DISSOLVED OXYGEN 9.2 8.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/23/73  
 TIME 1320  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
 A BAND OF EMERSED AQUATIC PLANTS COVERED MOST OF THE SHORELINE. BRUSH  
 OVERHANGS THE EDGE OF THE WATER. THE LITTORAL BOTTOM IS MUCK. AN ALGAL  
 BLOOM WAS OBSERVED.



Fazon Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 11, 1973.  
Aerial photo, September 27, 1973.

## LOUISE LAKE

## WHATCOM COUNTY

LATITUDE 48\*42'26" LONGITUDE 122\*19'39" T37N-R4E-8  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.32 SQ MI  
 ALTITUDE 330. FT  
 LAKE AREA 29. ACRES  
 LAKE VOLUME 1000. ACRE-FT  
 MEAN DEPTH 34. FT  
 MAXIMUM DEPTH 91. FT  
 SHORELINE LENGTH 1.0 MI  
 SHORELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.38  
 BOTTOM SLOPE 7.2 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 10 %  
 NUMBER OF NEARSHORE HOMES 6  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 2 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 84 %  
 LAKE SURFACE 14 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 8/22/73  
 TIME 1625 1630  
 DEPTH (FT) 3. 85.  
 TOTAL NITRATE (N) 0.00 0.68  
 TOTAL NITRITE (N) 0.00 0.02  
 TOTAL AMMONIA (N) 0.14 1.4  
 TOTAL ORGANIC NITROGEN (N) 0.40 0.20  
 TOTAL PHOSPHORUS (P) 0.022 0.051  
 TOTAL ORTHOPHOSPHATE (P) 0.005 0.005  
 SPECIFIC CONDUCTANCE (MICROMHOS) 81 97  
 WATER TEMPERATURE (DEG C) 18.5 4.0  
 COLOR (PLATINUM-COBALT UNITS) 30 180  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 9.0 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/22/73  
 TIME 1635  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 6  
 FECAL COLIFORM, MEAN (COL./100ML) 3

## REMARKS

-----  
 EMERSED PLANTS COVERED APPROXIMATELY 5 PERCENT OF THE LAKE SURFACE. AN ALGAL BLOOM WAS OBSERVED. A GOLF COURSE AND RECREATIONAL FACILITIES ARE LOCATED ON THE NORTH SIDE OF THE LAKE. LAND CLEARING AND EXCAVATION WERE OBSERVED ON THE EAST SIDE OF THE LAKE.



Louise Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 9, 1973.  
Aerial photo, September 27, 1973.

## MAIDEN LAKE

## WHATCOM COUNTY

LATITUDE 48°47'58" LONGITUDE 121°39'40" T38N-R9E-8  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.49 SQ MI  
ALTITUDE 3880. FT  
LAKE AREA 18. ACRES  
LAKE VOLUME 1000. ACRE-FT  
MEAN DEPTH 55. FT  
MAXIMUM DEPTH 99. FT  
SHORELINE LENGTH 0.67 MI  
SHORELINE CONFIGURATION 1.1  
DEVELOPMENT OF VOLUME 0.56  
BOTTOM SLOPE 9.9 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 94 %  
LAKE SURFACE 6 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 8/18/73  
TIME 1345 1350  
DEPTH (FT) 3. 89.  
TOTAL NITRATE (N) 0.02 0.02  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.01 1.0  
TOTAL ORGANIC NITROGEN (N) 0.06 0.10  
TOTAL PHOSPHORUS (P) 0.004 0.011  
TOTAL ORTHOPHOSPHATE (P) 0.001 0.004  
SPECIFIC CONDUCTANCE (MICROMHOS) 15 130  
WATER TEMPERATURE (DEG C) 10.8 4.0  
COLOR (PLATINUM-COBALT UNITS) 80 5  
SECCHI-DISC VISIBILITY (FT) 55  
DISSOLVED OXYGEN 9.7 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

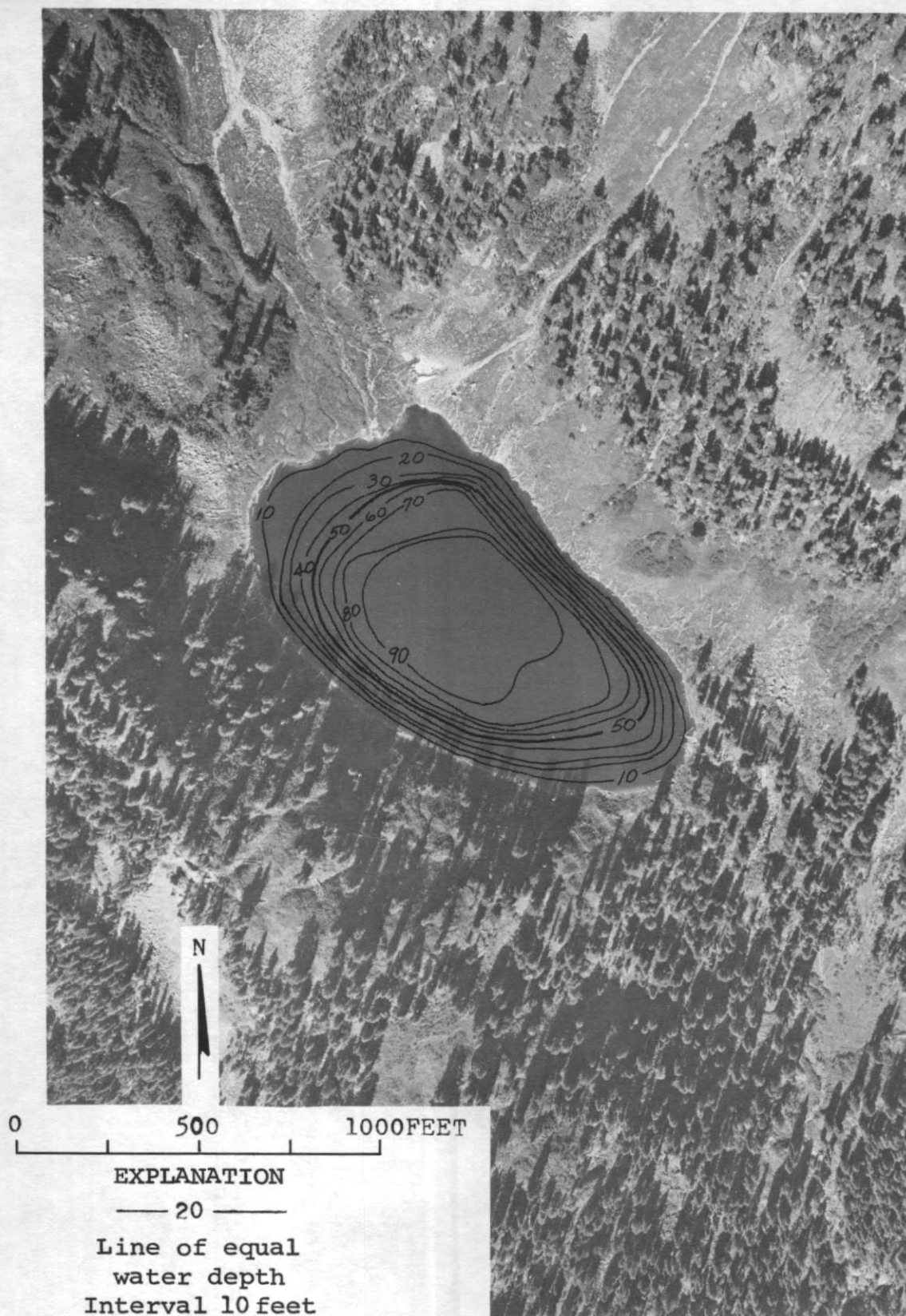
NONE OR &lt;1 %

DATE 8/18/73  
TIME 1405  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
NO MACROPHYTES WERE OBSERVED. HYDROGEN SULFIDE WAS DETECTED IN THE  
HYPOLIMNION.





Maiden Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 28, 1973.  
Aerial photo, September 27, 1973.



## PADDEN LAKE

## WHATCOM COUNTY

LATITUDE 48°42'15" LONGITUDE 122°27'41" T37N-R3E-8  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 2.63 SQ MI  
ALTITUDE 447. FT  
LAKE AREA 160. ACRES  
LAKE VOLUME 4300. ACRE-FT  
MEAN DEPTH 27. FT  
MAXIMUM DEPTH 59. FT  
SHORELINE LENGTH 2.3 MI  
SHORELINE CONFIGURATION 1.3  
DEVELOPMENT OF VOLUME 0.46  
BOTTOM SLOPE 2.0 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN <1 %  
AGRICULTURAL 5 %  
FOREST OR UNPRODUCTIVE 86 %  
LAKE SURFACE 9 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
SAMPLE SITE 1  
DATE 7/ 9/74  
TIME 1525 1535  
DEPTH (FT) 3. 43.  
TOTAL NITRATE (N) 0.22 0.23  
TOTAL NITRITE (N) 0.01 0.01  
TOTAL AMMONIA (N) 0.05 0.11  
TOTAL ORGANIC NITROGEN (N) 0.21 0.14  
TOTAL PHOSPHORUS (P) 0.008 0.011  
DISSOLVED ORTHOPHOSPHATE (P) 0.002 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 78 75  
WATER TEMPERATURE (DEG C) 18.0 12.0  
COLOR (PLATINUM-COBALT UNITS) 10 10  
SECCHI-DISC VISIBILITY (FT) 13  
DISSOLVED OXYGEN 9.6 2.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 11- 25 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 7/ 9/74  
TIME 1610  
NUMBER OF FECAL COLIFORM SAMPLES 3  
FECAL COLIFORM, MINIMUM (COL./100ML) 10  
FECAL COLIFORM, MAXIMUM (COL./100ML) 195  
FECAL COLIFORM, MEAN (COL./100ML) 68

## REMARKS

-----  
A PARK AND SWIMMING BEACH ARE LOCATED ON THE NORTH SHORE AND A GOLF COURSE ON THE EAST SHORE OF THE LAKE. THE U.S.GEOLOGICAL SURVEY SAMPLED THE LAKE FOUR TIMES IN 1974. THE PLANT SURVEY WAS DONE AUGUST 13, 1974.



0 1000 2000 FEET

EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 10 feet

Padden Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, January 22, 1974.  
Aerial photo, June 16, 1969.

## PINE LAKE

## WHATCOM COUNTY

LATITUDE 48°40'27" LONGITUDE 122°26'36" T37N-R3E-29  
PUGET SOUND BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.16 SQ MI  
ALTITUDE 1570. FT  
LAKE AREA 7. ACRES  
LAKE VOLUME 87. ACRE-FT  
MEAN DEPTH 12. FT  
MAXIMUM DEPTH 28. FT  
SHORELINE LENGTH 0.61 MI  
SHORELINE CONFIGURATION 1.6  
DEVELOPMENT OF VOLUME 0.44  
BOTTOM SLOPE 4.5 %  
BASIN GEOLOGY SED./META.  
INFLOW NONE VISIBLE  
OUTFLOW CHANNEL ABSENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 93 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

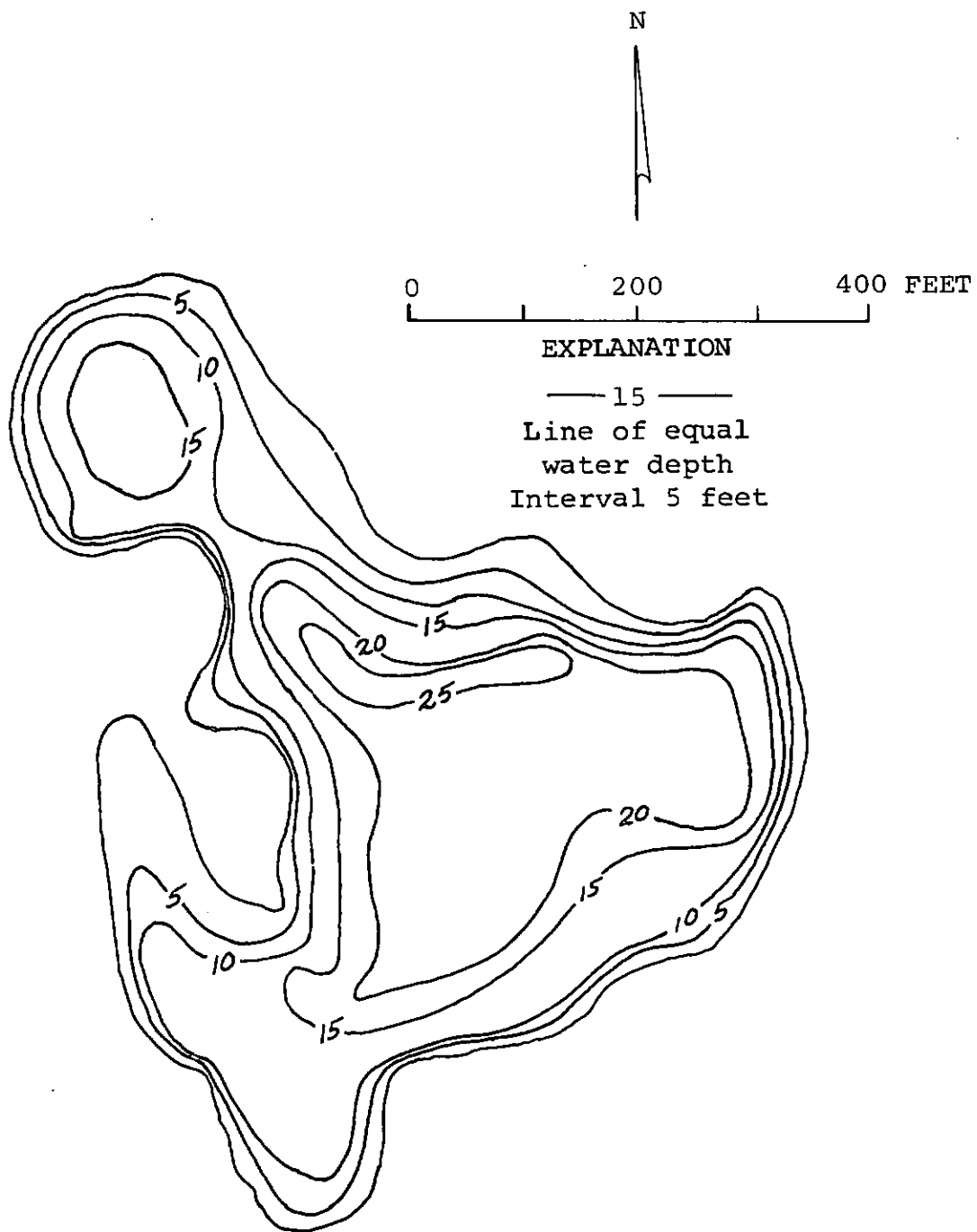
-----  
DATE 8/23/73  
TIME 1455 1500  
DEPTH (FT) 3. 17.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.01  
TOTAL AMMONIA (N) 0.14 0.35  
TOTAL ORGANIC NITROGEN (N) 0.35 0.22  
TOTAL PHOSPHORUS (P) 0.016 0.025  
TOTAL ORTHOPHOSPHATE (P) 0.006 0.009  
SPECIFIC CONDUCTANCE (MICROMHOS) 41 41  
WATER TEMPERATURE (DEG C) 16.0 7.1  
COLOR (PLATINUM-COBALT UNITS) 35 55  
SECCHI-DISC VISIBILITY (FT) 6  
DISSOLVED OXYGEN 9.0 0.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

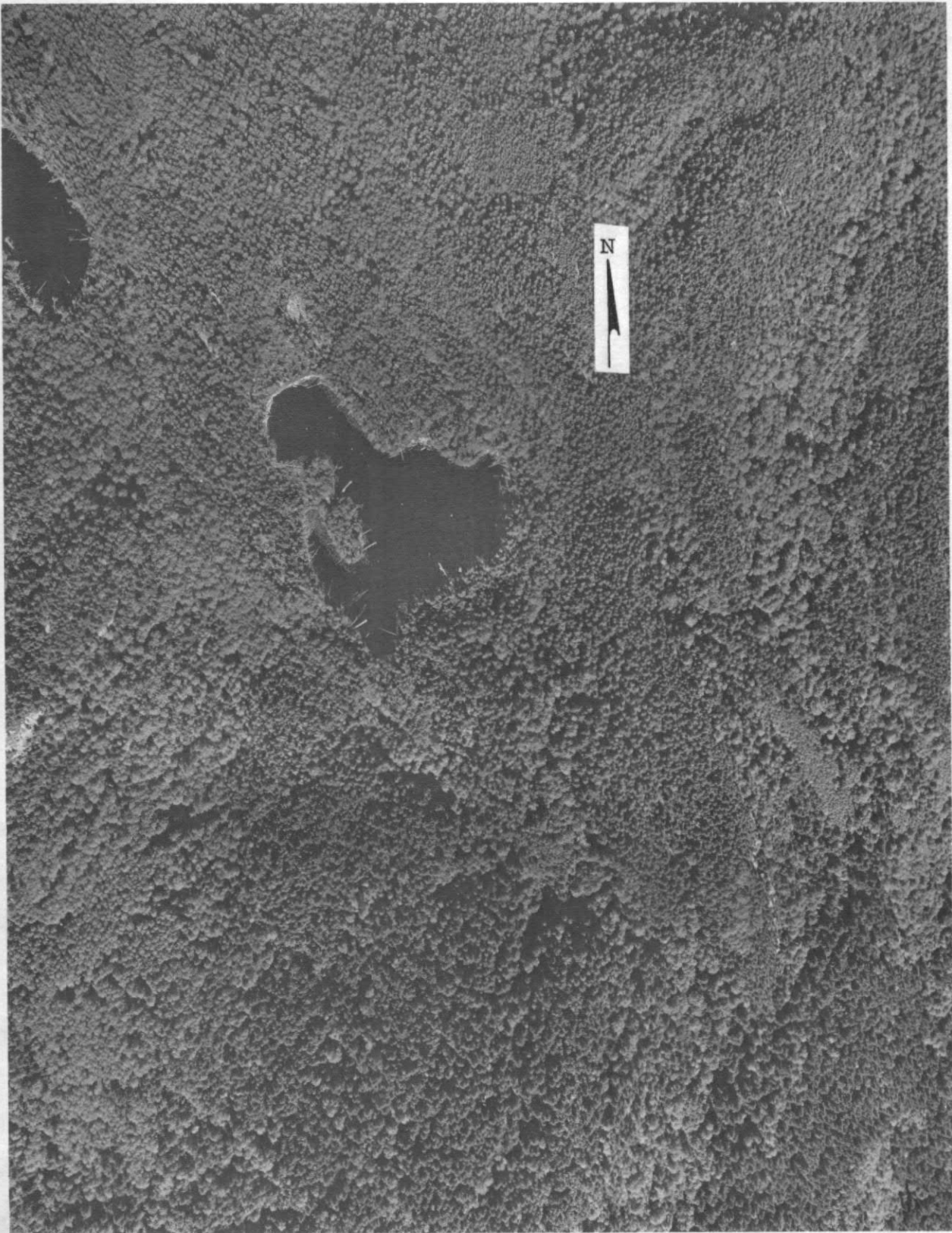
DATE 8/23/73  
TIME 1500  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) 1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 2  
FECAL COLIFORM, MEAN (COL./100ML) 1

## REMARKS

-----  
MOST OF THE SHORELINE IS COVERED WITH EMERSED PLANTS AS WELL AS LOG  
DEBRIS. THE LITTORAL BOTTOM IS MOSTLY MUCK.



Pine Lake, Whatcom County. From U.S. Geological Survey, September 29, 1973.



Pine Lake, Whatcom County. September 27, 1973. Approx. scale 1:4800.

REED LAKE

WHATCOM COUNTY

LATITUDE 48\*39'42" LONGITUDE 122\*19'38" T37N-R4E-29  
 PUGET SOUND BASIN

PHYSICAL DATA

-----  
 DRAINAGE AREA 1.85 SQ MI  
 ALTITUDE 394. FT  
 LAKE AREA 16. ACRES  
 LAKE VOLUME 180. ACRE-FT  
 MEAN DEPTH 11. FT  
 MAXIMUM DEPTH 18. FT  
 SHORELINE LENGTH 0.78 MI  
 SHORELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.64  
 BOTTOM SLOPE 1.9 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 26 %  
 NUMBER OF NEARSHORE HOMES 8  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 1 %  
 AGRICULTURAL 1 %  
 FOREST OR UNPRODUCTIVE 97 %  
 LAKE SURFACE 1 %  
 PUBLIC BOAT ACCESS TO LAKE --

WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

SAMPLE SITE

-----  
 DATE 1  
 8/22/73  
 TIME 1700 1705  
 DEPTH (FT) 3. 12.  
 TOTAL NITRATE (N) 0.20 0.11  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.06 0.20  
 TOTAL ORGANIC NITROGEN (N) 0.26 0.73  
 TOTAL PHOSPHORUS (P) 0.014 0.012  
 TOTAL ORTHOPHOSPHATE (P) 0.005 0.009  
 SPECIFIC CONDUCTANCE (MICROMHOS) 51 54  
 WATER TEMPERATURE (DEG C) 19.7 17.8  
 COLOR (PLATINUM-COBALT UNITS) 25 25  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 9.5 3.0

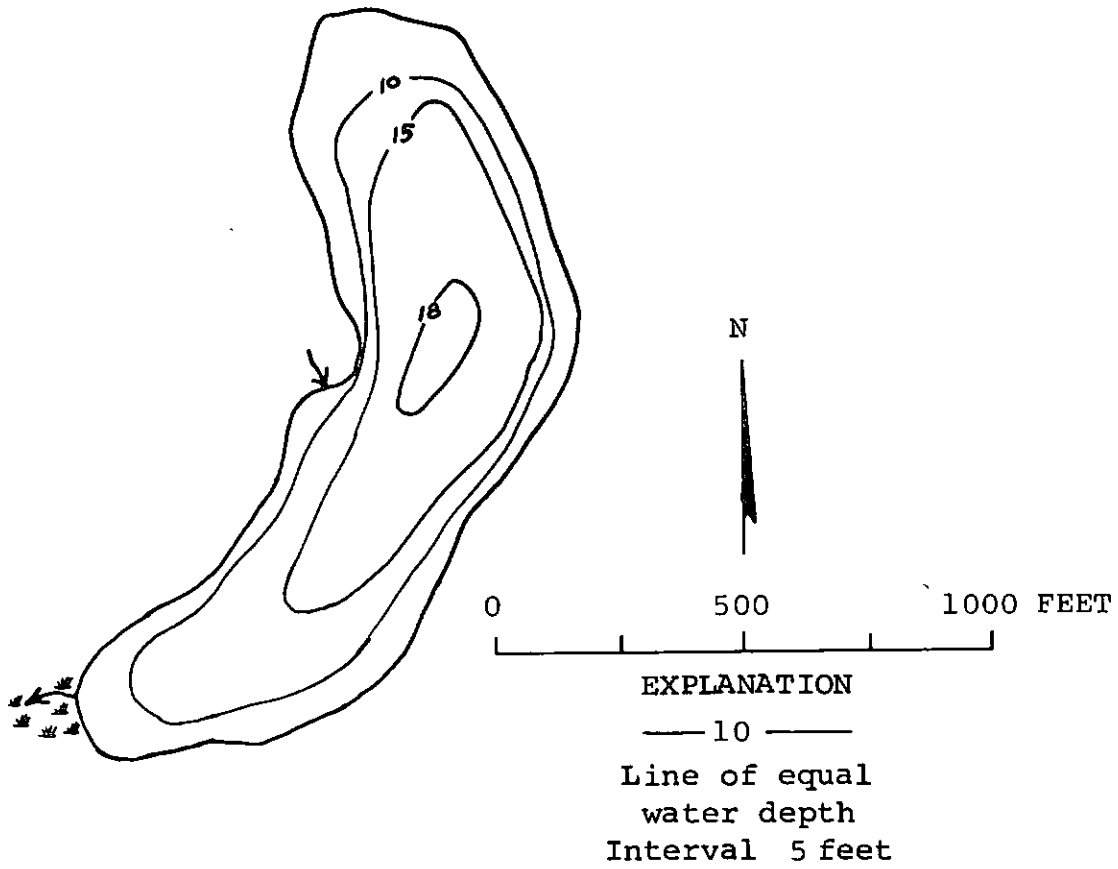
LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/22/73  
 TIME 1715  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) 1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 4  
 FECAL COLIFORM, MEAN (COL./100ML) 2

REMARKS

-----  
 EMERSED AND SUBMERSED AQUATIC PLANTS COVERED MOST OF THE NEARSHORE  
 BOTTOM.





Reed Lake, Whatcom County. From Washington Department of Game, February 26, 1946.



Reed Lake, Whatcom County. September 27, 1973. Approx. scale 1:4800.

## SAMISH (EAST ARM) LAKE

WHATCOM COUNTY

LATITUDE 48°38'56" LONGITUDE 122°22'15" T37N-R3E-27  
 SAMISH RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 9.20 SQ MI  
 ALTITUDE 273. FT  
 LAKE AREA 680. ACRES  
 LAKE VOLUME 24000. ACRE-FT  
 MEAN DEPTH 31. FT  
 MAXIMUM DEPTH 75. FT  
 SHORELINE LENGTH 6.3 MI  
 SHORELINE CONFIGURATION 1.7  
 DEVELOPMENT OF VOLUME 0.42  
 BOTTOM SLOPE 5.1 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 91 %  
 NUMBER OF NEARSHORE HOMES 171  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 3 %  
 AGRICULTURAL 3 %  
 FOREST OR UNPRODUCTIVE 82 %  
 LAKE SURFACE 12 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

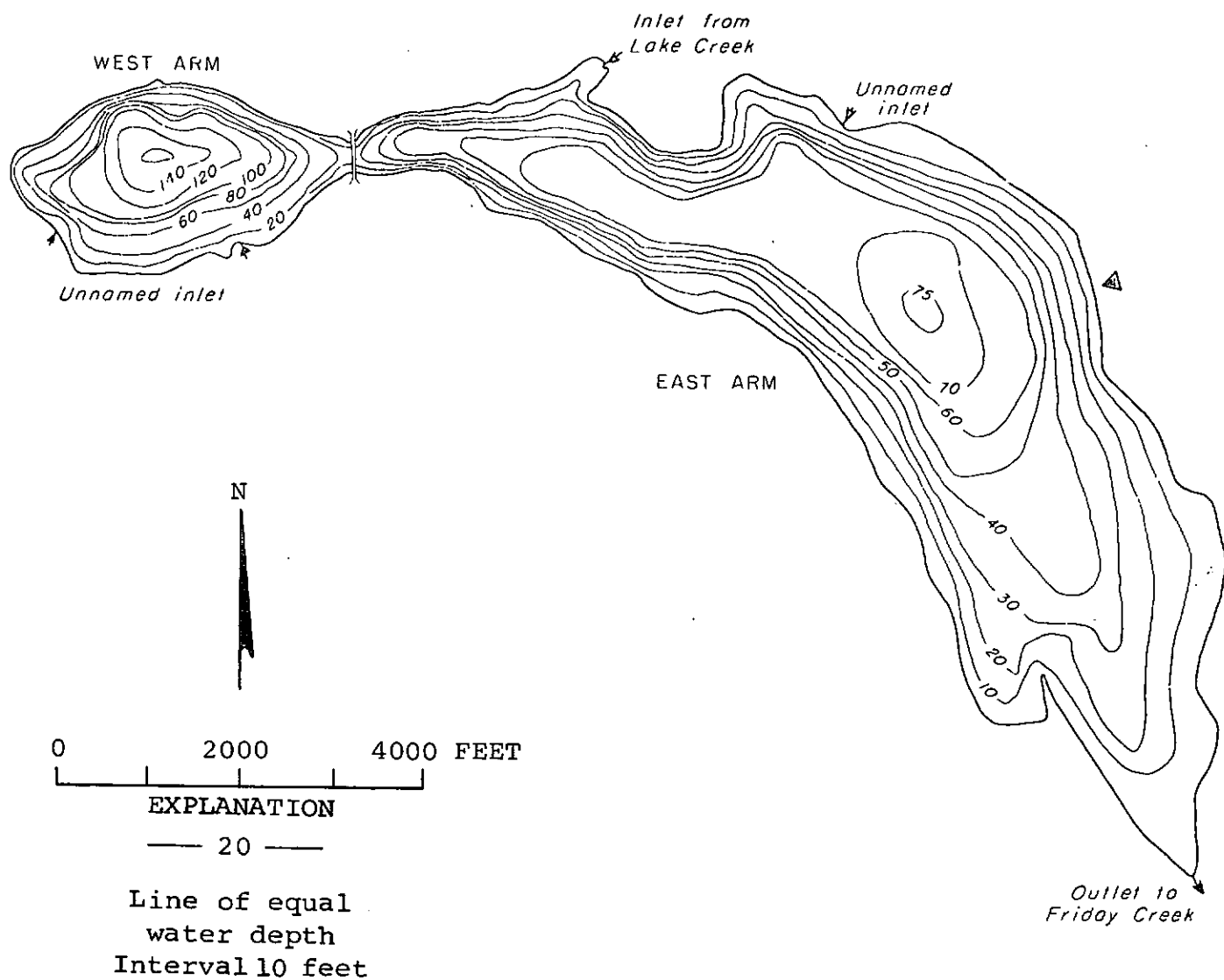
-----  
 SAMPLE SITE 1  
 DATE 7/14/71  
 TIME 1400 1410  
 DEPTH (FT) 3. 66.  
 DISSOLVED NITRATE (N) 0.40 0.52  
 TOTAL NITRITE (N) -- --  
 TOTAL AMMONIA (N) 0.05 0.00  
 TOTAL ORGANIC NITROGEN (N) -- --  
 TOTAL PHOSPHORUS (P) 0.000 0.010  
 TOTAL ORTHOPHOSPHATE (P) 0.000 0.000  
 SPECIFIC CONDUCTANCE (MICROMHOS) 64 69  
 WATER TEMPERATURE (DEG C) 18.0 7.0  
 COLOR (PLATINUM-COBALT UNITS) 0 0  
 SECCHI-DISC VISIBILITY (FT) 10  
 DISSOLVED OXYGEN 10.4 1.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/24/74  
 TIME 940  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) 27  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 25  
 FECAL COLIFORM, MEAN (COL./100ML) 26

## REMARKS

-----  
 IN 1971 THE U.S.GEOLOGICAL SURVEY SAMPLED THE EAST ARM FOUR TIMES. THE  
 PLANT SURVEY WAS DONE ON SEPTEMBER 28, 1971. HIGHWAY 5 PARALLELS THE EAST  
 SHORE OF SAMISH LAKE.



Samish (East Arm) Lake, Whatcom County. From Washington Department of Game, July 15, 1956.



Samish (East Arm) Lake, Whatcom County. July 14, 1971. Approx. scale 1:14,000.

## SAMISH (WEST ARM) LAKE

WHATCOM COUNTY

LATITUDE 48°40'15" LONGITUDE 122°24'38" T37N-R3E-36  
 SAMISH RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 3.70 SQ MI  
 ALTITUDE 273. FT  
 LAKE AREA 130. ACRES  
 LAKE VOLUME 9100. ACRE-FT  
 MEAN DEPTH 71. FT  
 MAXIMUM DEPTH 140. FT  
 SHORELINE LENGTH 1.8 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.49  
 BOTTOM SLOPE 16. %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 62 %  
 NUMBER OF NEARSHORE HOMES 221  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 2 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 92 %  
 LAKE SURFACE 6 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 7/14/71  
 TIME 1255 1300  
 DEPTH (FT) 3. 125.  
 DISSOLVED NITRATE (N) 0.24 0.97  
 TOTAL NITRITE (N) -- --  
 TOTAL AMMONIA (N) 0.00 0.05  
 TOTAL ORGANIC NITROGEN (N) -- --  
 TOTAL PHOSPHORUS (P) 0.000 0.010  
 TOTAL ORTHOPHOSPHATE (P) 0.000 0.010  
 SPECIFIC CONDUCTANCE (MICROMHOS) 63 70  
 WATER TEMPERATURE (DEG C) 18.0 4.0  
 COLOR (PLATINUM-COBALT UNITS) -- --  
 SECCHI-DISC VISIBILITY (FT) 12  
 DISSOLVED OXYGEN 9.9 --

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/24/74  
 TIME 930  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 RESORTS AND PARK FACILITIES ARE LOCATED ON THE LAKE AND RECREATIONAL USE IS HEAVY. IN 1971 THE U.S. GEOLOGICAL SURVEY SAMPLED THE WEST ARM FOUR TIMES. THE PLANT SURVEY WAS MADE SEPTEMBER 28, 1971.







Samish (West arm) Lake, Whatcom County. June 16, 1969. Approx. scale 1:14,000.

## SHUKSAN LAKE

## WHATCOM COUNTY

LATITUDE 48\*46'30" LONGITUDE 121\*34' 6" T38N-R9E-13  
SKAGIT RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 0.61 SQ MI  
ALTITUDE 3660. FT  
LAKE AREA 29. ACRES  
LAKE VOLUME 1200. ACRE-FT  
MEAN DEPTH 43. FT  
MAXIMUM DEPTH 85. FT  
SHORELINE LENGTH 1.0 MI  
SHORELINE CONFIGURATION 1.4  
DEVELOPMENT OF VOLUME 0.51  
BOTOM SLOPE 6.7 %  
BASIN GEOLOGY IGNEOUS  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 93 %  
LAKE SURFACE 7 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

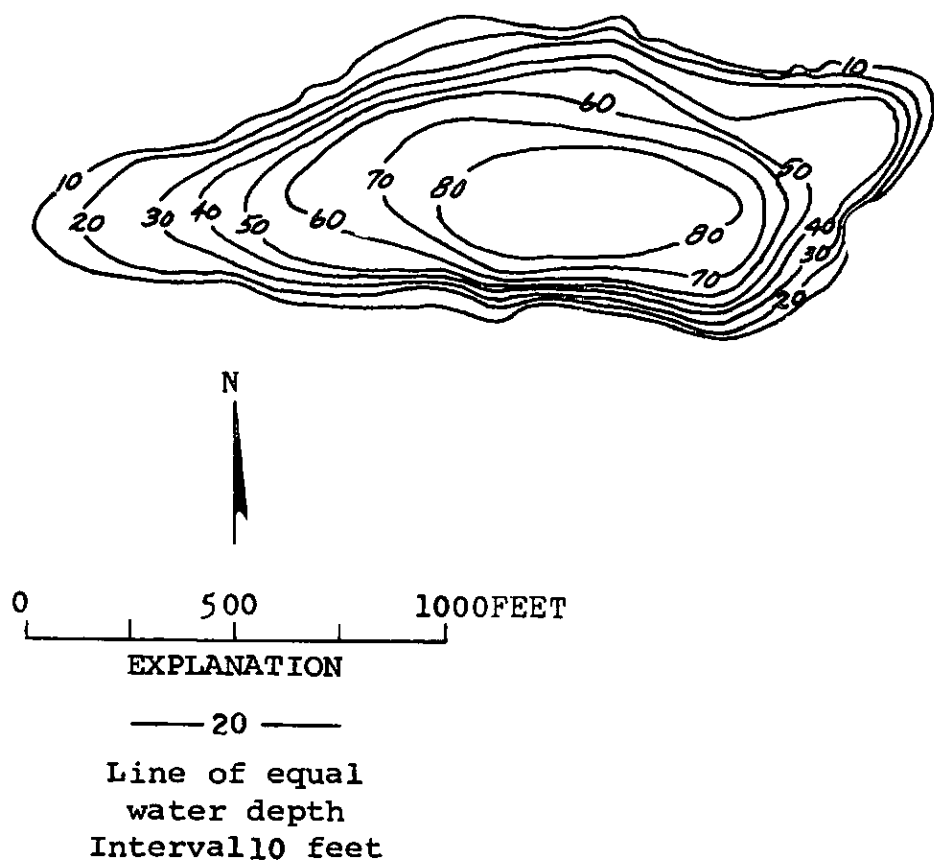
-----  
SAMPLE SITE 1  
DATE 8/18/73  
TIME 1215 1220  
DEPTH (FT) 3. 75.  
TOTAL NITRATE (N) 0.01 0.02  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.02 0.70  
TOTAL ORGANIC NITROGEN (N) 0.08 0.14  
TOTAL PHOSPHORUS (P) 0.004 0.012  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.008  
SPECIFIC CONDUCTANCE (MICROMHOS) 32 70  
WATER TEMPERATURE (DEG C) 15.0 3.1  
COLOR (PLATINUM-COBALT UNITS) 5 75  
SECCHI-DISC VISIBILITY (FT) 22  
DISSOLVED OXYGEN 9.1 0.1

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/14/73  
TIME 1230  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
VERY FEW MACROPHYTES WERE OBSERVED. HYDROGEN SULFIDE WAS DETECTED IN THE HYPOLIMNION.



Shuksan Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 30, 1973.  
Aerial photo, September 27, 1973.

## SILVER LAKE

## WHATCOM COUNTY

LATITUDE 48°58' 2" LONGITUDE 122° 4'11" T40N-R6E-7  
NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 2.14 SQ MI  
ALTITUDE 757. FT  
LAKE AREA 180. ACRES  
LAKE VOLUME 3100. ACPE-FT  
MEAN DEPTH 17. FT  
MAXIMUM DEPTH 30. FT  
SHORELINE LENGTH 3.3 MI  
SHORELINE CONFIGURATION 1.7  
DEVELOPMENT OF VOLUME 0.55  
BOTTOM SLOPE 0.94 %  
BASIN GEOLOGY SED./META.  
INFLOW INTERMITTENT  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 17 %  
NUMBER OF NEARSHORE HOMES 26  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 7 %  
FOREST OR UNPRODUCTIVE 77 %  
LAKE SURFACE 13 %  
PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

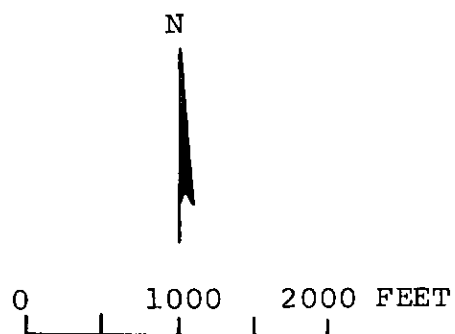
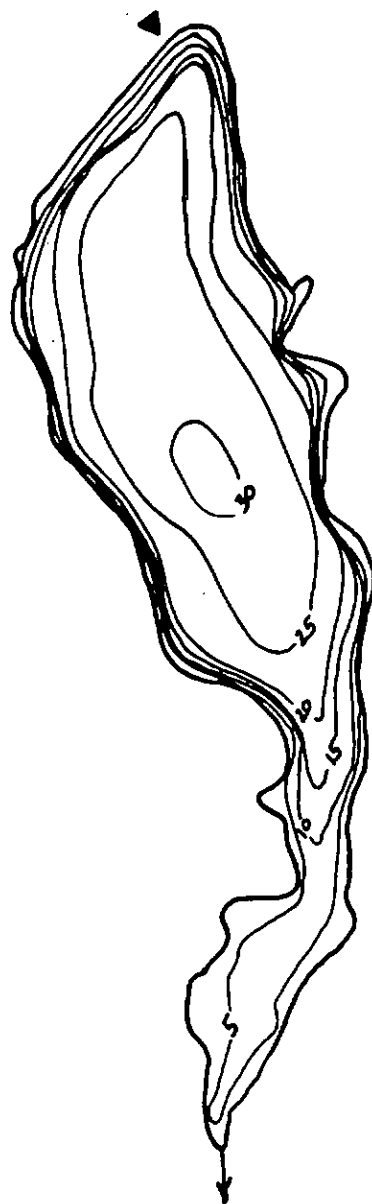
-----  
SAMPLE SITE 1  
DATE 8/22/73  
TIME 1245 1250  
DEPTH (FT) 3. 21.  
TOTAL NITRATE (N) 0.04 0.02  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.05 0.09  
TOTAL ORGANIC NITROGEN (N) 0.27 0.19  
TOTAL PHOSPHORUS (P) 0.022 0.039  
TOTAL ORTHOPHOSPHATE (P) 0.002 0.003  
SPECIFIC CONDUCTANCE (MICROMHOS) 140 140  
WATER TEMPERATURE (DEG C) 19.4 19.0  
COLOR (PLATINUM-COBALT UNITS) 5 5  
SECCHI-DISC VISIBILITY (FT) 9  
DISSOLVED OXYGEN 8.2 7.4

LAKE SHORELINE COVERED BY EMERSED PLANTS 26- 50 %  
LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/22/73  
TIME 1255  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
A HEAVY COVER OF EMERSED AND SUBMERSED PLANTS WAS FOUND ON THE SHALLOW SOUTH END OF THE LAKE. THE LITTORAL BOTTOM IS SAND AND GRAVEL ON THE NORTH END AND MUCK ON THE SOUTH END OF THE LAKE. AN ALGAL BLOOM WAS OBSERVED.



EXPLANATION

— 20 —

Line of equal  
water depth  
Interval 5 feet

Silver Lake, Whatcom County. From Washington Department of Game, July 22, 1950.





Silver Lake, Whatcom County. June 1, 1970. Approx. scale 1:12,000.

## SQUALICUM LAKE

## WHATCOM COUNTY

LATITUDE 48°47'57" LONGITUDE 122°21' 6" T38N-R4E-7  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.76 SQ MI  
 ALTITUDE 477. FT  
 LAKE AREA 33. ACRES  
 LAKE VOLUME 220. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 15. FT  
 SHORELINE LENGTH 0.87 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.44  
 BOTTOM SLOPE 1.1 %  
 BASIN GEOLOGY SED./META.  
 INFLOW NONE VISIBLE  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 26 %  
 FOREST OR UNPRODUCTIVE 67 %  
 LAKE SURFACE 7 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

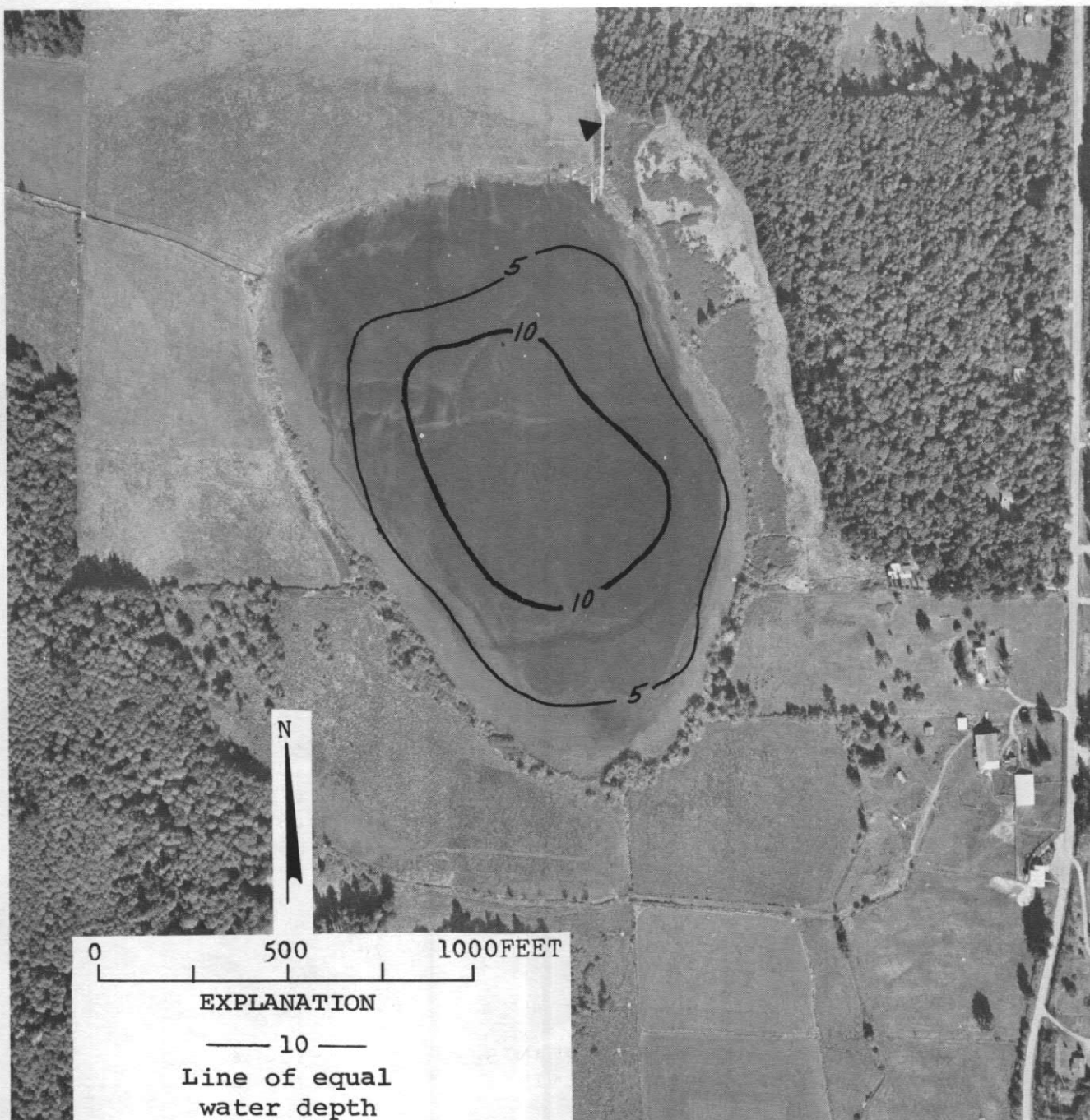
-----  
 SAMPLE SITE 1  
 DATE 8/23/73  
 TIME 1400 1405  
 DEPTH (FT) 3. 8.  
 TOTAL NITRATE (N) 0.02 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.24 0.15  
 TOTAL ORGANIC NITROGEN (N) 0.73 0.69  
 TOTAL PHOSPHORUS (P) 0.072 0.059  
 TOTAL ORTHOPHOSPHATE (P) 0.018 0.023  
 SPECIFIC CONDUCTANCE (MICROMHOS) 90 91  
 WATER TEMPERATURE (DEG C) 17.1 16.1  
 COLOR (PLATINUM-COBALT UNITS) 70 70  
 SECCHI-DISC VISIBILITY (FT) 6  
 DISSOLVED OXYGEN 8.7 8.5

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 1- 10 %

DATE 8/23/73  
 TIME 1405  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 A HEAVY GROWTH OF EMERSED AND SUBMERSED PLANTS COVERED THE LITTORAL  
 BOTTOM. THE NEARSHORE BOTTOM IS MUCK. AN ALGAL BLOOM WAS OBSERVED.



EXPLANATION  
—— 10 ——  
Line of equal  
water depth  
Interval 5 feet

Squalicum Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 10, 1973.  
Aerial photo, September 27, 1973.

TENNANT LAKE

WHATCOM COUNTY

LATITUDE 48°49'48" LONGITUDE 122°34'47" T39N-R2E-32  
 NOOKSACK RIVER BASIN

PHYSICAL DATA

-----  
 DRAINAGE AREA 0.92 SQ MI  
 ALTITUDE 15. FT  
 LAKE AREA 32. ACRES  
 LAKE VOLUME 90. ACRE-FT  
 MEAN DEPTH 3. FT  
 MAXIMUM DEPTH 6. FT  
 SHORELINE LENGTH 1.0 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.47  
 BOTTOM SLOPE 0.45 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL ABSENT

CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 78 %  
 FOREST OR UNPRODUCTIVE 17 %  
 LAKE SURFACE 5 %  
 PUBLIC BOAT ACCESS TO LAKE --

WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE

	1	
DATE	7/ 8/74	
TIME	1250	1300
DEPTH (FT)	2.	5.
TOTAL NITRATE (N)	0.00	--
TOTAL NITRITE (N)	0.01	--
TOTAL AMMONIA (N)	0.32	--
TOTAL ORGANIC NITROGEN (N)	1.2	--
TOTAL PHOSPHORUS (P)	0.20	--
DISSOLVED ORTHOPHOSPHATE (P)	0.010	--
SPECIFIC CONDUCTANCE (MICROMHOS)	224	447
WATER TEMPERATURE (DEG C)	16.0	14.0
COLOR (PLATINUM-COBALT UNITS)	300	--
SECCHI-DISC VISIBILITY (FT)	2	
DISSOLVED OXYGEN	6.0	0.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 76-100 %

DATE

7/ 8/74

TIME

1315

NUMBER OF FECAL COLIFORM SAMPLES

2

FECAL COLIFORM, MINIMUM (COL./100ML)

7

FECAL COLIFORM, MAXIMUM (COL./100ML)

7

FECAL COLIFORM, MEAN (COL./100ML)

7

REMARKS

-----  
 A MARSH-LIKE LAKE WITH LITTLE OPEN WATER DURING THE SUMMER SEASON.  
 MUCH OF THE LAKE SURFACE WAS COVERED WITH DENSE BEDS OF MACROPHYTES.  
 EXPOSED STUMPS AND SNAGS PROTRUDE FROM THE LAKE SURFACE. THE BOTTOM IS  
 MUCK. IN 1974 THE U.S.GEOLOGICAL SURVEY SAMPLED THE LAKE FOUR TIMES. THE  
 PLANT SURVEY WAS CONDUCTED ON AUGUST 12, 1974.





Tennant Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 16, 1974.  
Aerial photo, July 20, 1974.

## TERRELL LAKE

WHATCOM COUNTY

LATITUDE 48°52'10" LONGITUDE 122°41'19" T39N-R1E-16  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 2.85 SQ MI  
 ALTITUDE 212. FT  
 LAKE AREA 440. ACRES  
 LAKE VOLUME 3000. ACRE-FT  
 MEAN DEPTH 7. FT  
 MAXIMUM DEPTH 10. FT  
 SHORELINE LENGTH 3.8 MI  
 SHORELINE CONFIGURATION 1.3  
 DEVELOPMENT OF VOLUME 0.68  
 BOTTOM SLOPE 0.20 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 58 %  
 FOREST OR UNPRODUCTIVE 18 %  
 LAKE SURFACE 24 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

-----  
 SAMPLE SITE 1  
 DATE 9/16/74  
 TIME 1530 1535  
 DEPTH (FT) 3. 7.  
 TOTAL NITRATE (N) 0.01 0.01  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.15 0.07  
 TOTAL ORGANIC NITROGEN (N) 0.64 0.77  
 TOTAL PHOSPHORUS (P) 0.033 0.038  
 TOTAL ORTHOPHOSPHATE (P) 0.003 0.002  
 SPECIFIC CONDUCTANCE (MICROMHOS) 120 110  
 WATER TEMPERATURE (DEG C) 20.0 18.0  
 COLOR (PLATINUM-COBALT UNITS) 50 45  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 11.6 10.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 26- 50 %

DATE 7/ 9/74  
 TIME 1620  
 NUMBER OF FECAL COLIFORM SAMPLES 4  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) 41  
 FECAL COLIFORM, MEAN (COL./100ML) 11

## REMARKS

-----  
 THE LAKE IS A STATE GAME REFUGE AND HAS A LARGE RESIDENT WATERFOWL  
 POPULATION. THE LAKE HAD A HEAVY COVER OF EMERSED AND SUBMERSED PLANTS.  
 THE LITTORAL BOTTOM IS MOSTLY MUCK.





Terrell Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, January 22, 1974.  
Aerial photo, July 21, 1969.

## TOAD (EMERALD) LAKE

## WHATCOM COUNTY

LATITUDE 48°47'23" LONGITUDE 122°23'57" T38N-R3E-15  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.50 SQ MI  
 ALTITUDE 714. FT  
 LAKE AREA 33. ACRES  
 LAKE VOLUME 660. ACRE-FT  
 MEAN DEPTH 20. FT  
 MAXIMUM DEPTH 31. FT  
 SHORELINE LENGTH 1.2 MI  
 SHORELINE CONFIGURATION 1.4  
 DEVELOPMENT OF VOLUME 0.64  
 BOTTOM SLOPE 2.3 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 57 %  
 NUMBER OF NEARSHORE HOMES 33  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 5 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 85 %  
 LAKE SURFACE 10 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 7/ 9/74  
 TIME 1020 1030  
 DEPTH (FT) 3. 25.  
 TOTAL NITRATE (N) 0.00 0.00  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.05 0.19  
 TOTAL ORGANIC NITROGEN (N) 0.20 0.48  
 TOTAL PHOSPHORUS (P) 0.013 0.071  
 DISSOLVED ORTHOPHOSPHATE (P) 0.011 0.008  
 SPECIFIC CONDUCTANCE (MICROMHOS) 88 108  
 WATER TEMPERATURE (DEG C) 18.0 8.0  
 COLOR (PLATINUM-COBALT UNITS) 10 35  
 SECCHI-DISC VISIBILITY (FT) 9  
 DISSOLVED OXYGEN 9.2 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS 1- 10 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

## DATE

7/ 9/74

## TIME

1045

## NUMBER OF FECAL COLIFORM SAMPLES

3

## FECAL COLIFORM, MINIMUM (COL./100ML)

1

## FECAL COLIFORM, MAXIMUM (COL./100ML)

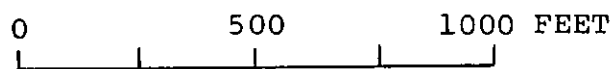
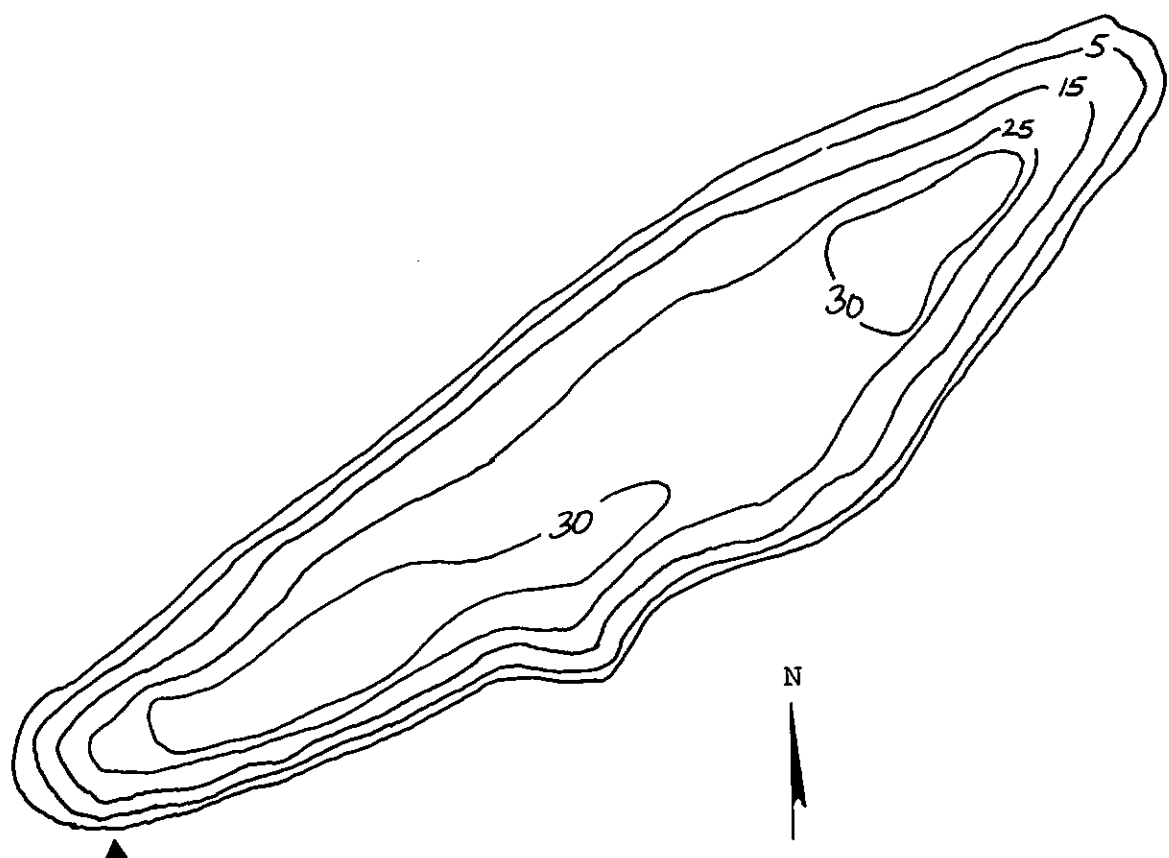
8

## FECAL COLIFORM, MEAN (COL./100ML)

5

## REMARKS

-----  
 IN 1974 THE U.S.GEOLOGICAL SURVEY SAMPLED THE LAKE FOUR TIMES. THE PLANT SURVEY WAS CONDUCTED ON AUGUST 13, 1974.

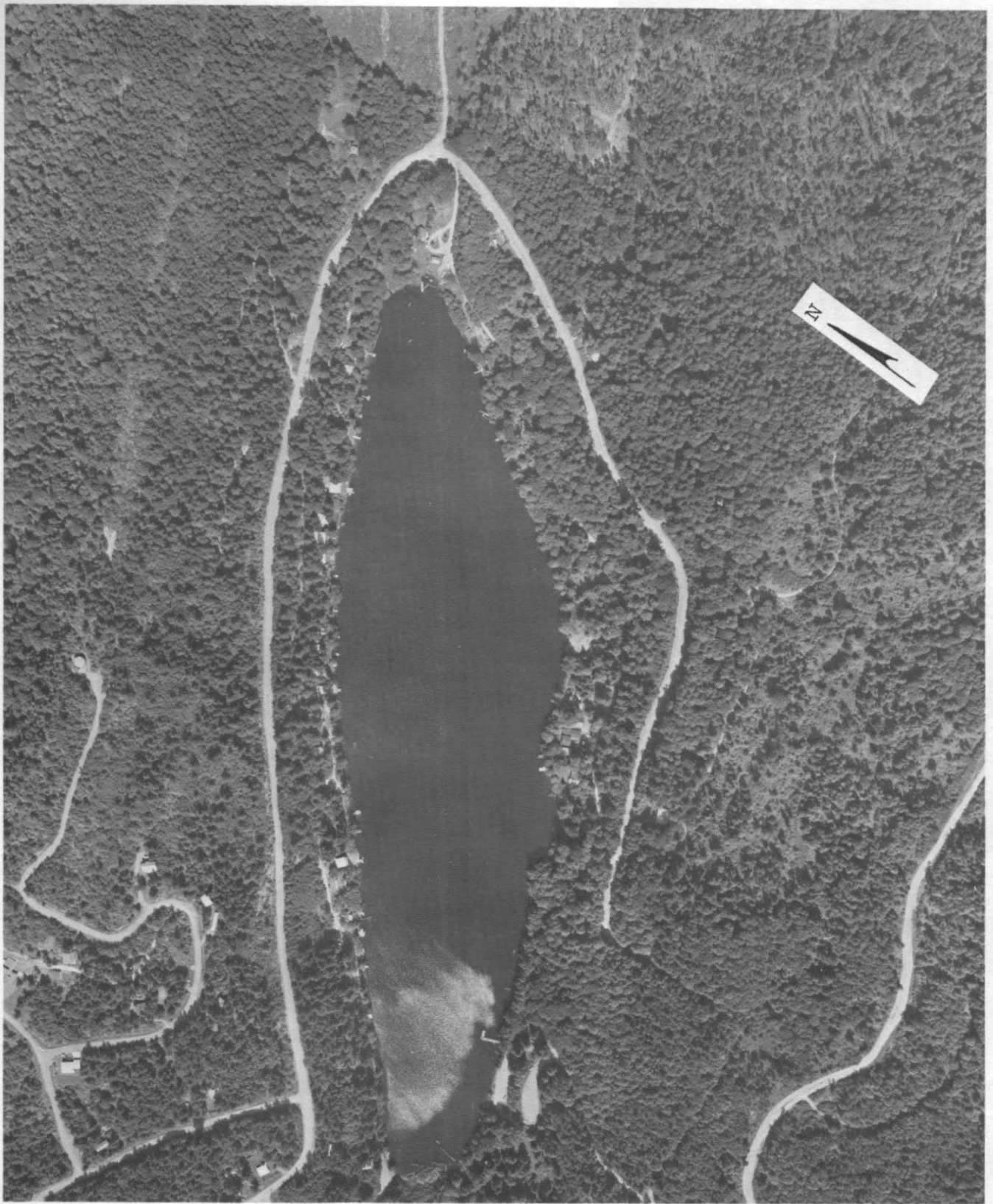


EXPLANATION

— 15 —

Line of equal  
water depth  
Interval 5 feet

Toad Lake, Whatcom County. From U.S. Geological Survey, January 21, 1974.



Toad Lake, Whatcom County. July 20, 1974. Approx. scale 1:4800.

## TOMYHOI LAKE

## WHATCOM COUNTY

LATITUDE 48°58'46" LONGITUDE 121°41' 9" T40N-R9E-7  
FRASER RIVER BASIN

## PHYSICAL DATA

-----  
DRAINAGE AREA 4.99 SQ MI  
ALTITUDE 3720. FT  
LAKE AREA 75. ACRES  
LAKE VOLUME 1300. ACRE-FT  
MEAN DEPTH 17. FT  
MAXIMUM DEPTH 41. FT  
SHORELINE LENGTH 2.1 MI  
SHORELINE CONFIGURATION 1.7  
DEVELOPMENT OF VOLUME 0.41  
BOTTOM SLOPE 2.0 %  
BASIN GEOLOGY SED./META.  
INFLOW PERENNIAL  
OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
RESIDENTIAL DEVELOPMENT 0 %  
NUMBER OF NEARSHORE HOMES 0  
LAND USE IN DRAINAGE BASIN  
RESIDENTIAL URBAN 0 %  
RESIDENTIAL SUBURBAN 0 %  
AGRICULTURAL 0 %  
FOREST OR UNPRODUCTIVE 98 %  
LAKE SURFACE 2 %  
PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

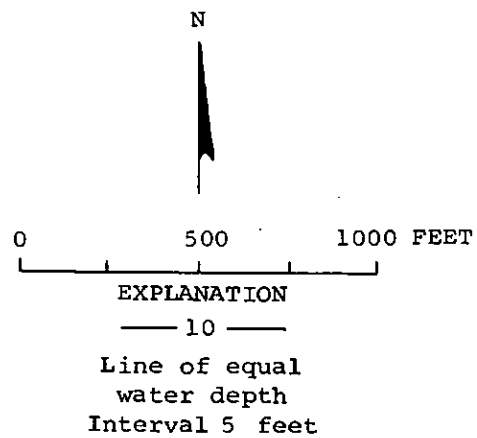
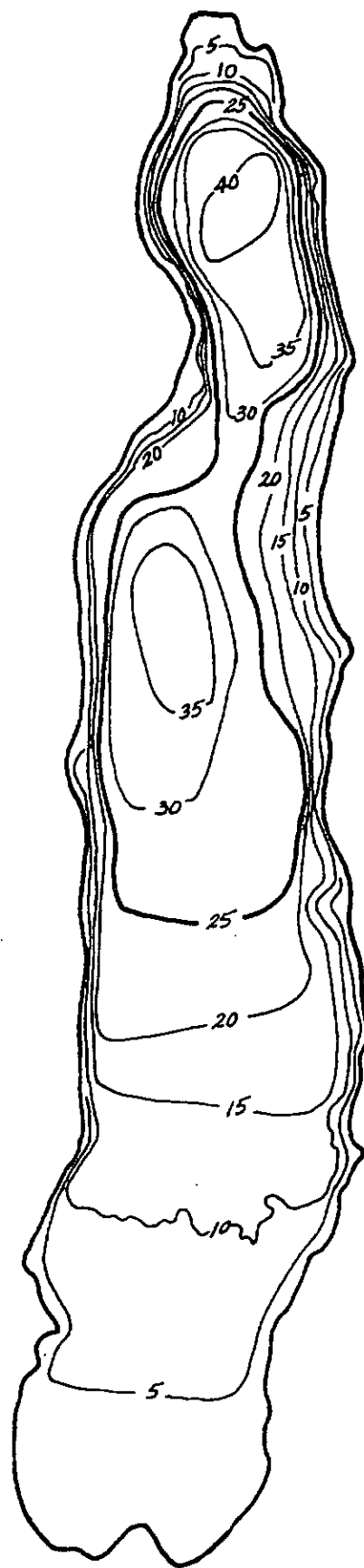
-----  
SAMPLE SITE 1  
DATE 8/18/73  
TIME 1710 1715  
DEPTH (FT) 3. 27.  
TOTAL NITRATE (N) 0.01 0.01  
TOTAL NITRITE (N) 0.00 0.00  
TOTAL AMMONIA (N) 0.01 0.02  
TOTAL ORGANIC NITROGEN (N) 0.05 0.04  
TOTAL PHOSPHORUS (P) 0.003 0.003  
TOTAL ORTHOPHOSPHATE (P) 0.001 0.002  
SPECIFIC CONDUCTANCE (MICROMHOS) 42 42  
WATER TEMPERATURE (DEG C) 10.8 9.7  
COLOR (PLATINUM-COBALT UNITS) 5 5  
SECCHI-DISC VISIBILITY (FT) 30  
DISSOLVED OXYGEN 9.8 10.1

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/18/73  
TIME 1525  
NUMBER OF FECAL COLIFORM SAMPLES 2  
FECAL COLIFORM, MINIMUM (COL./100ML) <1  
FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
THERE IS NO EVIDENCE OF EITHER SUBMERSED OR SURFACE AQUATIC GROWTH. BUT  
THERE ARE SEVERAL SNAGS AND LOGS ALONG THE SHORELINE.



Tomyhoi Lake, Whatcom County. From U.S. Geological Survey, September 27, 1973.





Tomyhoi Lake, Whatcom County. September 27, 1973. Approx. scale 1:6400.

## TWIN. LOWER LAKE

## WHATCOM COUNTY

LATITUDE 48°56'59" LONGITUDE 121°38'20" T40N-R9E-16  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.33 SQ MI  
 ALTITUDE 5150. FT  
 LAKE AREA 20. ACRES  
 LAKE VOLUME 830. ACRE-FT  
 MEAN DEPTH 42. FT  
 MAXIMUM DEPTH 96. FT  
 SHORELINE LENGTH 0.72 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.43  
 BOTTOM SLOPE 9.1 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URRAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 90 %  
 LAKE SURFACE 10 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 1  
 8/18/73  
 TIME 1440 1450  
 DEPTH (FT) 3. 89.  
 TOTAL NITRATE (N) 0.02 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.01 0.67  
 TOTAL ORGANIC NITROGEN (N) 0.06 0.33  
 TOTAL PHOSPHORUS (P) 0.002 0.009  
 TOTAL ORTHOPHOSPHATE (P) 0.001 0.001  
 SPECIFIC CONDUCTANCE (MICROMHOS) 49 86  
 WATER TEMPERATURE (DEG C) 10.5 3.0  
 COLOR (PLATINUM-COBALT UNITS) 0 10  
 SECCHI-DISC VISIBILITY (FT) 45  
 DISSOLVED OXYGEN 10.1 0.2

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

DATE

8/18/73

TIME

1525

NUMBER OF FECAL COLIFORM SAMPLES

2

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

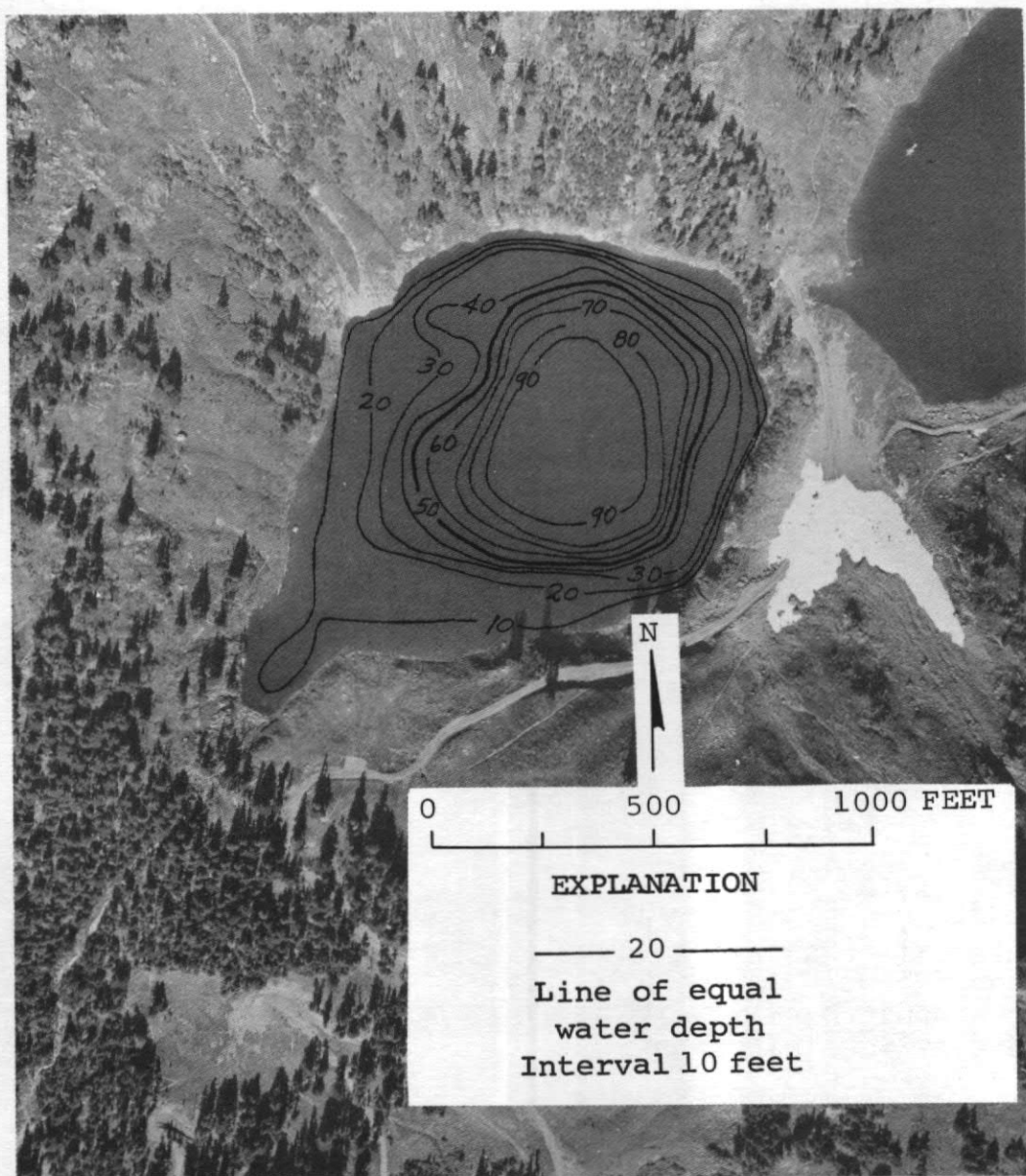
&lt;1

FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

REMARKS

-----  
 NO MACROPHYTES WERE OBSERVED.



Twin, Lower Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 27, 1973.  
Aerial photo, September 27, 1973.

## TWIN, UPPER LAKE

## WHATCOM COUNTY

LATITUDE 48°57' 9" LONGITUDE 121°38' 3" T40N-R9E-16  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.15 SQ MI  
 ALTITUDE 5175. FT  
 LAKE AREA 17. ACRES  
 LAKE VOLUME 760. ACRE-FT  
 MEAN DEPTH 44. FT  
 MAXIMUM DEPTH 91. FT  
 SHORELINE LENGTH 0.66 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.48  
 BOTTOM SLOPE 9.3 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 82 %  
 LAKE SURFACE 18 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 1  
 8/18/73  
 TIME 1610 1615  
 DEPTH (FT) 3. 85.  
 TOTAL NITRATE (N) 0.01 0.04  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.01 0.02  
 TOTAL ORGANIC NITROGEN (N) 0.04 0.05  
 TOTAL PHOSPHORUS (P) 0.003 0.004  
 TOTAL ORTHOPHOSPHATE (P) 0.000 0.002  
 SPECIFIC CONDUCTANCE (MICROMHOS) 60 88  
 WATER TEMPERATURE (DEG C) 9.5 3.0  
 COLOR (PLATINUM-COBALT UNITS) 5 5  
 SECCHI-DISC VISIBILITY (FT) 50  
 DISSOLVED OXYGEN 9.6 2.7

LAKE SHORELINE COVERED BY EMERSED PLANTS

LITTLE OR NONE

LAKE SURFACE COVERED BY EMERSED PLANTS

NONE OR &lt;1 %

## DATE

8/18/73

## TIME

1625

NUMBER OF FECAL COLIFORM SAMPLES

2

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

&lt;1

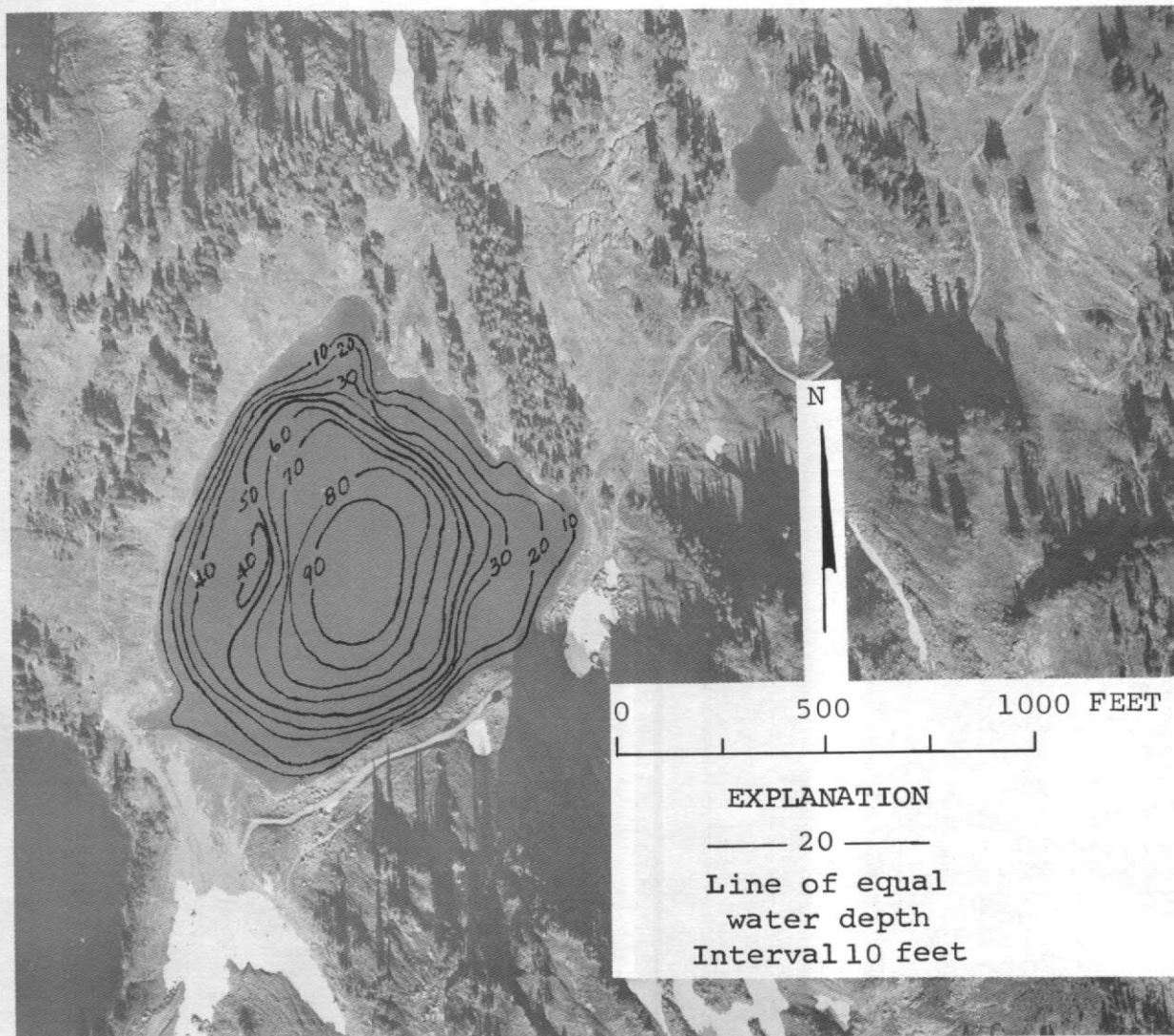
FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
 NO MACROPHYTES WERE OBSERVED. THE WATER CLARITY WAS HIGH AS INDICATED BY  
 A SECCHI DISC READING OF 50 FEET.





Twin, Upper Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 27, 1973.  
Aerial photo, September 27, 1973.

## WHATCOM LAKE

## WHATCOM COUNTY

LATITUDE 48°45'28" LONGITUDE 122°25'17" T38N-R3E-28  
 PUGET SOUND BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 55.9 SQ MI  
 ALTITUDE 315. FT  
 LAKE AREA 5000. ACRES  
 LAKE VOLUME 770000. ACRE-FT  
 MEAN DEPTH 150. FT  
 MAXIMUM DEPTH 330. FT  
 SHORELINE LENGTH 27. MI  
 SHORELINE CONFIGURATION 2.7  
 DEVELOPMENT OF VOLUME 0.47  
 BOTTOM SLOPE 2.0 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 37 %  
 NUMBER OF NEARSHORE HOMES 348  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN <1 %  
 RESIDENTIAL SUBURBAN 2 %  
 AGRICULTURAL 2 %  
 FOREST OR UNPRODUCTIVE 82 %  
 LAKE SURFACE 14 %  
 PUBLIC BOAT ACCESS TO LAKE YES

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

	1		2		3	
	8/ 9/74		8/ 9/74		8/ 9/74	
DATE	1030	1035	1200	1205	1300	1305
TIME	3.	197.	3.	197.	3.	49.
DEPTH (FT)	0.37	0.11	0.10	0.36	0.09	0.20
TOTAL NITRATE (N)	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL NITRITE (N)	0.05	0.06	0.05	0.05	0.05	0.07
TOTAL AMMONIA (N)	0.17	0.15	0.24	0.06	0.10	0.11
TOTAL ORGANIC NITROGEN (N)	0.003	0.005	0.005	0.005	0.006	0.004
TOTAL PHOSPHORUS (P)	0.001	0.005	0.005	0.003	0.004	0.004
TOTAL ORTHOPHOSPHATE (P)	60	58	56	56	56	55
SPECIFIC CONDUCTANCE (MICROMHOS)	20.2	6.0	21.0	6.0	21.0	13.0
WATER TEMPERATURE (DEG C)	0	0	0	0	0	0
COLOR (PLATINUM-COBALT UNITS)	15		21		20	
SECCHI-DISC VISIBILITY (FT)	9.5	10.4	9.4	10.1	9.6	9.0
DISSOLVED OXYGEN						

LAKE SHORELINE COVERED BY EMERSED PLANTS  
 LAKE SURFACE COVERED BY EMERSED PLANTS

LITTLE OR NONE  
 NONE OR <1 %

## DATE

## TIME

8/ 9/74

1030

NUMBER OF FECAL COLIFORM SAMPLES

8

FECAL COLIFORM, MINIMUM (COL./100ML)

&lt;1

FECAL COLIFORM, MAXIMUM (COL./100ML)

1

FECAL COLIFORM, MEAN (COL./100ML)

&lt;1

## REMARKS

-----  
 A LARGE NATURAL LAKE STABILIZED BY A DAM. MOST OF THE EMERSED PLANTS WERE OBSERVED ONLY IN THE SHELTERED BAY AREAS. AT ALL THREE SAMPLING STATIONS DO REMAINED NEAR SATURATION THROUGHOUT THE WATER COLUMN. THE STATE TROUT HATCHERY DISCHARGES .65 MGD WATER INTO BRANNIAN CREEK HATCHING AND REARING PONDS. NO DATA ARE AVAILABLE ON THE CONTENT OF THE WASTEWATER (STATE OF WASHINGTON DEPARTMENT OF ECOLOGY WASTEWATER-DISCHARGE MASTER INVENTORY). ADDITIONAL STUDIES ON LAKE WHATCOM HAVE BEEN MADE BY WESTERN WASHINGTON STATE COLLEGE.





Whatcom Lake, Whatcom County. July 14, 1971. Approx. scale 1:63,000.

## WISEMAN LAKE

## WHATCOM COUNTY

LATITUDE 48°42'20" LONGITUDE 121°56'18" T37N-R7E-8  
 NOOKSACK RIVER BASIN.

## PHYSICAL DATA

-----  
 DRAINAGE AREA 0.20 SQ MI  
 ALTITUDE 4250. FT  
 LAKE AREA 20. ACRES  
 LAKE VOLUME 1200. ACRE-FT  
 MEAN DEPTH 60. FT  
 MAXIMUM DEPTH 100. FT  
 SHORELINE LENGTH 0.69 MI  
 SHORELINE CONFIGURATION 1.1  
 DEVELOPMENT OF VOLUME 0.59  
 BOTTOM SLOPE 9.7 %  
 BASIN GEOLOGY SED./META.  
 INFLOW INTERMITTENT  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 0 %  
 NUMBER OF NEARSHORE HOMES 0  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 0 %  
 RESIDENTIAL SUBURBAN 0 %  
 AGRICULTURAL 0 %  
 FOREST OR UNPRODUCTIVE 84 %  
 LAKE SURFACE 16 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

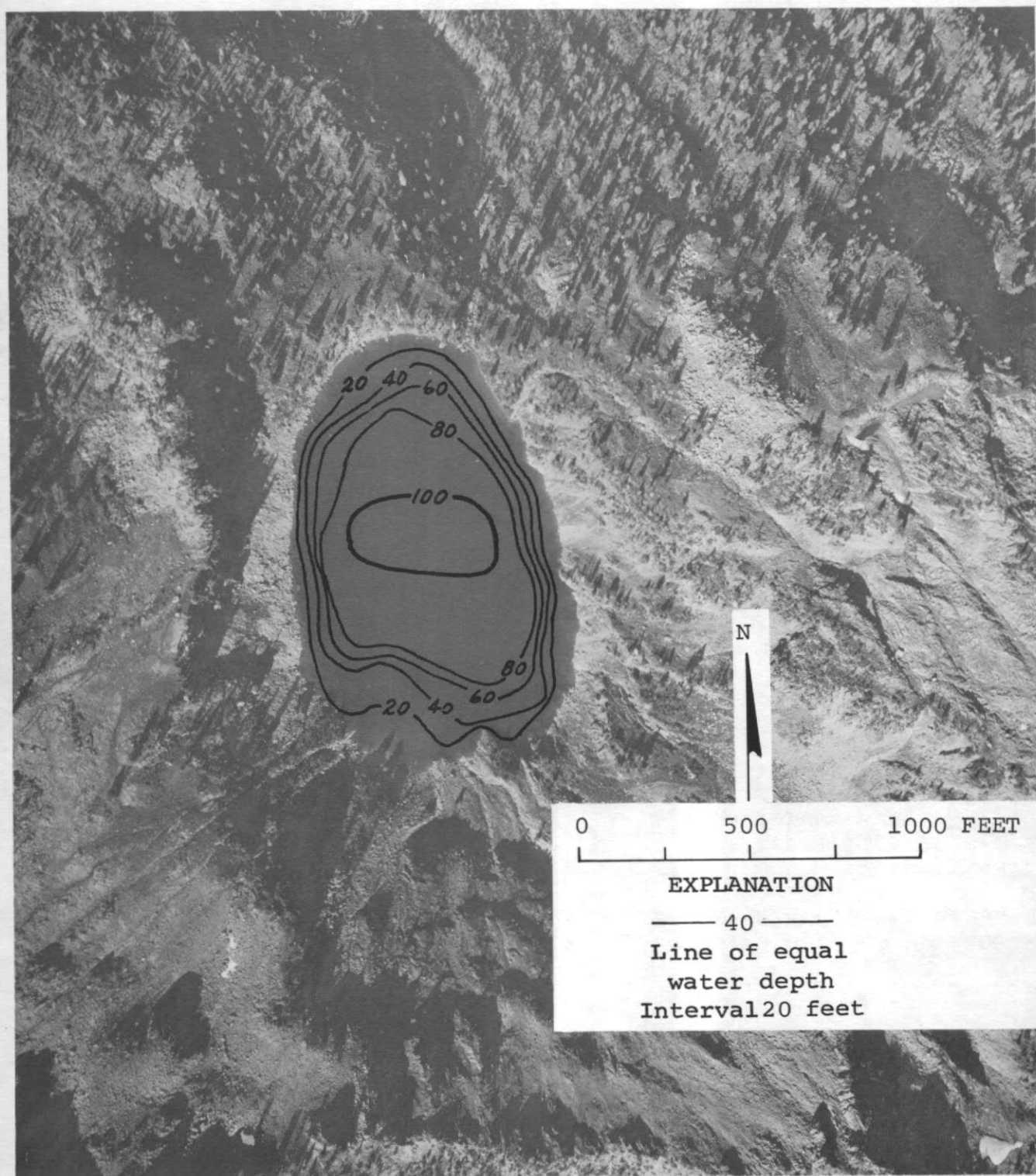
-----  
 SAMPLE SITE 1  
 DATE 8/20/73  
 TIME 1240 1245  
 DEPTH (FT) 3. 89.  
 TOTAL NITRATE (N) 0.03 0.02  
 TOTAL NITRITE (N) 0.00 0.00  
 TOTAL AMMONIA (N) 0.01 0.01  
 TOTAL ORGANIC NITROGEN (N) 0.03 0.09  
 TOTAL PHOSPHORUS (P) 0.001 0.002  
 TOTAL ORTHOPHOSPHATE (P) 0.001 0.001  
 SPECIFIC CONDUCTANCE (MICROMHOS) 15 20  
 WATER TEMPERATURE (DEG C) 10.8 3.8  
 COLOR (PLATINUM-COBALT UNITS) 5 5  
 SECCHI-DISC VISIBILITY (FT) 70  
 DISSOLVED OXYGEN 9.7 8.0

LAKE SHORELINE COVERED BY EMERSED PLANTS LITTLE OR NONE  
 LAKE SURFACE COVERED BY EMERSED PLANTS NONE OR <1 %

DATE 8/20/73  
 TIME 1305  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 NO AQUATIC PLANTS WERE OBSERVED.



Wiseman Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, September 30, 1973.  
Aerial photo, September 27, 1973.

## WISER LAKE

## WHATCOM COUNTY

LATITUDE 48°54'15" LONGITUDE 122°29'28" T39N-R2E-1  
 NOOKSACK RIVER BASIN

## PHYSICAL DATA

-----  
 DRAINAGE AREA 3.75 SQ MI  
 ALTITUDE 50. FT  
 LAKE AREA 100. ACRES  
 LAKE VOLUME 610. ACRE-FT  
 MEAN DEPTH 6. FT  
 MAXIMUM DEPTH 11. FT  
 SHORELINE LENGTH 2.3 MI  
 SHORELINE CONFIGURATION 1.6  
 DEVELOPMENT OF VOLUME 0.54  
 BOTTOM SLOPE 0.46 %  
 BASIN GEOLOGY SED./META.  
 INFLOW PERENNIAL  
 OUTFLOW CHANNEL PRESENT

## CULTURAL DATA

-----  
 RESIDENTIAL DEVELOPMENT 47 %  
 NUMBER OF NEARSHORE HOMES 30  
 LAND USE IN DRAINAGE BASIN  
 RESIDENTIAL URBAN 2 %  
 RESIDENTIAL SUBURBAN 2 %  
 AGRICULTURAL 77 %  
 FOREST OR UNPRODUCTIVE 15 %  
 LAKE SURFACE 4 %  
 PUBLIC BOAT ACCESS TO LAKE --

## WATER-QUALITY DATA (IN MG/L UNLESS OTHERWISE INDICATED)

## SAMPLE SITE

-----  
 DATE 8/23/73  
 TIME 1150 1155  
 DEPTH (FT) 3. 6.  
 TOTAL NITRATE (N) 0.00 --  
 TOTAL NITRITE (N) 0.01 --  
 TOTAL AMMONIA (N) 0.10 --  
 TOTAL ORGANIC NITROGEN (N) 0.56 --  
 TOTAL PHOSPHORUS (P) 0.041 --  
 TOTAL ORTHOPHOSPHATE (P) 0.006 --  
 SPECIFIC CONDUCTANCE (MICROMHOS) 330 --  
 WATER TEMPERATURE (DEG C) 18.3 18.1  
 COLOR (PLATINUM-COBALT UNITS) 20 --  
 SECCHI-DISC VISIBILITY (FT) 4  
 DISSOLVED OXYGEN 8.8 8.6

LAKE SHORELINE COVERED BY EMERSED PLANTS 76-100 %  
 LAKE SURFACE COVERED BY EMERSED PLANTS 11- 25 %

DATE 8/23/73  
 TIME 1200  
 NUMBER OF FECAL COLIFORM SAMPLES 2  
 FECAL COLIFORM, MINIMUM (COL./100ML) <1  
 FECAL COLIFORM, MAXIMUM (COL./100ML) <1  
 FECAL COLIFORM, MEAN (COL./100ML) <1

## REMARKS

-----  
 THE LAKE HAD A HEAVY COVER OF SUBMERSED PLANTS(ELODEA AND MILFOIL) OVER MOST OF THE LAKE BOTTOM,ESPECIALLY IN THE SMALL WEST BAY. EMERSED PLANTS COVERED THE SHORELINE. THE LITTORAL BOTTOM IS MUCK.





## EXPLANATION

— 10 —

Line of equal  
water depth  
Interval 5 feet

Wisner Lake, Whatcom County. Bathymetric map from  
U.S. Geological Survey, October 10, 1973.  
Aerial photo, September 27, 1973.

# INDEX

	Page
Clallam County	
Aldwell Lake-----	14
Beaver Lake-----	17
Dickey Lake-----	20
Elk Lake-----	23
Ozette Lake-----	26
Pleasant Lake-----	29
Seafield Lake-----	32
Sutherland Lake-----	35
Wentworth Lake-----	38
Island County	
Cranberry Lake-----	41
Crockett Lake-----	44
Deer Lake-----	46
Goss Lake-----	49
Kristoferson Lake-----	52
Lone Lake-----	55
Unnamed (31N-1E-6) Lake-----	58
Unnamed (33N-2E-7) Lake-----	61
Jefferson County	
Anderson Lake-----	64
Crocker Lake-----	67
Gibbs Lake-----	70
Kah Tai Lake-----	73
Leland Lake-----	75
Lords Lake-----	78
Peterson Lake-----	80
Sandy Shore Lake-----	83
Tarboo Lake-----	86
San Juan County	
Briggs Lake-----	89
Cascade Lake-----	92
Horseshoe Lake-----	95
Hummel Lake-----	98
Martins Lake-----	101
Mountain Lake-----	104
Spencer Lake-----	107
Sportsman Lake-----	110
Trout Lake-----	112
Zylstra Lake-----	115
Skagit County	
Beaver Lake-----	117
Big Lake-----	120
Bluff Lake-----	123
Campbell Lake-----	125



	Page
Skagit County--Continued	
Caskey Lake-----	128
Cavanaugh Lake-----	131
Clear (34N-5E-7) Lake-----	134
Clear (36N-9E-23) Lake-----	137
Cranberry Lake-----	139
Day Lake-----	142
Devils Lake-----	145
Erie Lake-----	147
Falls, Lower Lake-----	150
Falls, Upper Lake-----	152
Grandy Lake-----	155
Granite Lake-----	157
Heart (35N-1E-36) Lake-----	159
Heart (36N-7E-5) Lake-----	161
Jordan, Lower Lake-----	164
Jug Lake-----	166
McMurray Lake-----	168
Minkler Lake-----	171
Myrtle Lake-----	174
Pass Lake-----	177
Sauk Lake-----	180
Shannon Lake-----	183
Sixteen Lake-----	185
Springsteen Lake-----	187
Ten Lake-----	189
Whale Lake-----	191
Whatcom County	
Blue Lake-----	193
Cain Lake-----	195
Canyon Lake-----	198
Fazon Lake-----	200
Louise Lake-----	202
Maiden Lake-----	204
Padden Lake-----	206
Pine Lake-----	208
Reed Lake-----	211
Samish (East Arm) Lake-----	214
Samish (West Arm) Lake-----	217
Shuksan Lake-----	220
Silver Lake-----	222
Squalicum Lake-----	225
Tennant Lake-----	227
Terrell Lake-----	229
Toad (Emerald) Lake-----	231
Tomyhoi Lake-----	234
Twin, Lower Lake-----	237
Twin, Upper Lake-----	239
Whatcom Lake-----	241
Wiseman Lake-----	243
Wiser Lake-----	245

STATEWIDE:

ACC: ~~4~~19

Reconnaissance Data on Lakes in WA  
Volume 1  
Clallam, Island, Jefferson, San  
Juan, Skagit, and Whatcom Counties

